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Big Sky Clearwater

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If you have any ideas or information that you would like to pass along to other people involved in the water and wastewater field, please don't hesitate to contact the office of the Water Quality Bureau. This publication welcomes articles of interest and random pieces of information regarding anything to do with water.

An article may consist of your own thoughts and ideas about something you may have experienced. Perhaps such information could help someone else in their day-to-day work. It could also be a technical article that is developed from research information and library resource material. If it has to do with water and you think it may be of interest, give us a call at the WQB: 444-2406.

If you do not wish to continue receiving this publication please send us your name and address so that we can remove your name from our mailing list.

Water Quality Bureau
Department of Health & Environmental Sciences
Cogswell Building
Helena, MT 59620

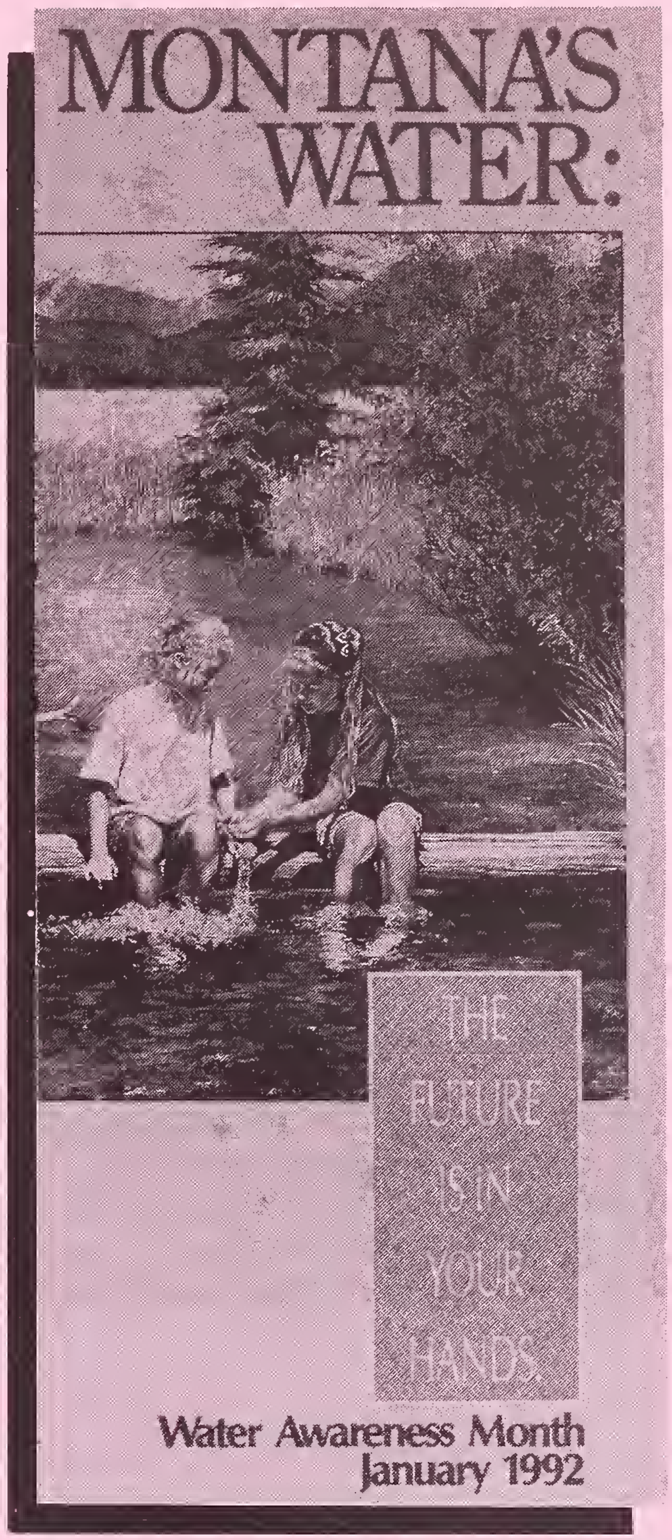
Cover: Water Awareness Poster for the month of January 1992.
Artwork by Shirley Cleary.

The Big Sky Clearwater is for water and wastewater operators across Montana. It is published two times a year by the Water Quality Bureau of the State Department of Health and Environmental Sciences in cooperation with the Montana Section of the American Water Works Association and the Montana Water Pollution Control Association.

Publication dates: February 1 and August 1. Last date to receive contributions is 30 days before publication.

WATER AWARENESS - EVERYDAY!

by
Jan Boyle
METC Coordinator



MONTANA'S WATER:

THE FUTURE IS IN YOUR HANDS.

Water Awareness Month
January 1992

January 1992 was proclaimed by the Governor of Montana as "Water Awareness" Month. The objectives of this focus for the month were to stimulate individual and community interest in water education and to provide high school students with the opportunity to learn more about Montana's water through a contest. The Montana Environmental Training Center (METC) was actively involved in developing and promoting this project. As an extension of this idea, I, for one, would like to see water awareness by an **everyday** focus for each of us. All too often, wonderful projects of this nature generate an initial thrust of interest and activity and then face away as the proclaimed period of a "day," "week," or "month" passes.

Clean water is the basis of life on our planet, both for humans and other living things. Water is everyone's business - whether it involves promoting safe drinking water or eliminating pollution and contamination of our groundwater and surface waters. Much of the responsibility for keeping the quality of Montana's water in a state of desirability rests with each of us. Old behaviors and attitudes about "free" water and "infinite" amounts of it have led to some real concerns today about the future of not only Montana's water resources but the world's. Pollution and contamination of our rivers, streams, lakes and groundwater may be, in part, due to some of these less than desirable attitudes about water. They say that "old attitudes die hard," and this may be true, but there needs to be an active and concerted effort made by each and everyone of us to discourage this type of complacency. Water awareness - everyday!

"Awareness" of environmental issues such as water quality involves an understanding of the problem, relating that understanding to one's own life situation, and making a personal contribution to the solution of the problem, no matter how small. It's an educational process. By learning the "pros" and "cons" of important water quality issues assessment of some options to the solution can be done by each of us. Becoming actively (rather than passively) involved with these issues on a personal level creates an "awareness" of the situation in each of us. That awareness may just promote some behavioral change in our own lives that may contribute to not only our own sense of well-being but to an ultimate solution to the big problem of water pollution and contamination. A wise old Native American once said, **"In our every deliberation, we must consider the impact of our decisions on the next seven generations."** Perhaps this thought should be our awareness now about the future of Montana's water resources. It really is up to us.

If you are interested in becoming actively involved in water resource education, call METC at 761-0417 for further information or the Montana Watercourse at 994-5392 and let's keep "water awareness" in our lives everyday!

CLEAN WATER YEAR, 1992:

Celebrating the Clean Water Act!

Throughout the 1960's, virtually every locality had its own experience with extensive fish kills, discolored streams, fouled beaches, and contaminated water supplies. Government response to these issues varied according to the limits of available science, technical and institutional capability and available funding. State and local leaders found themselves reacting to outraged citizens, constituency group pressures, and a critical press.

Legislators across the land tried to respond, often without solid technical evidence or insight about the economic and environmental consequences of the actions they championed. The continuing degradation of our nation's water led to the design of Federal and State environmental programs to reduce the destruction of our waterways.

Urged by a crescendo of public concern, the people of this nation called upon Congress to enact the *Clean Water Act* in 1972. One of the first and most successful environmental laws to be passed by the Federal Government, its primary goal is... "to restore and maintain the chemical, physical and biological integrity of the nation's waters," referred to in conference committees as "fishable and swimmable."

In the nearly two decades since its passage, Clean Water Act Programs have yielded measurable improvements in water quality. Streams that were once devoid of fish and other aquatic life now support an abundant and varied population.

Lakes that were choked by eutrophication are now vastly improved. Yet, much remains to be done to achieve the very stringent water quality objectives of later amendments, and to reform the institutional framework necessary to manage today's complex water programs at the local level.

Not surprisingly, the American people consistently rank clean, pure water as one of their highest priorities. Billions of dollars have been spent to achieve our clean water goals. Improved water quality, however, results in increased water use for recreation, agriculture, public water supply and industry. As our society becomes more complex, so do our water problems.

Ironically, even with the priority Americans consistently place on clean water, there has been a steady decline in public understanding, technical innovation, and youth education about the clean up and protection of our water resources. **The spirit of cooperation and enterprise, the hallmark of early efforts to craft an effective national water pollution control act, has faded since the early 1970's.** This public stewardship ethic needs to be rekindled to address the intricate web of human activity that consistently affects water quality.

To continue the progress of the last two decades, we must rebuild national commitment and bring the need for clean water to the attention of a generation of American citizens who have come of age since the law's original passage. America's Clean Water Foundation was formed to do just that. It's agenda is to promote commemorative programs that will focus national attention on critical surface and groundwater issues and renew a nationwide, grass roots commitment to restore and protect our water resources. The programs will provide creative opportunities to:

Enhance citizen involvement in cleanup efforts and promote personal stewardship of the nation's water resource;

Expand educational opportunities for America's youth by developing water protection programs, creating study documents, video, and computer learning opportunities;

Increase technical information exchange between national and international policy makers and environmental professionals;

> Document water quality status between 1972-1992 and state the results in a report to Congress and the American public; and
>
> Commemorate the twentieth anniversary of the Clean Water Act with a series of festivities held simultaneously in Washington, D.C. and the 50 state capitals.

You can take part in Clean Water Year festivities in Montana! For more information, contact Western Watercourse at 335 Culbertson, Bozeman, MT 59717. Phone 994-5392.

Adapted from articles by the Clean Water Foundation, 444 N. Capitol St. NW,
Washington, DC 20001 (202) 624-7833.

A PERSPECTIVE ON THE COST OF TRAINING

by
Jan Boyle
METC Coordinator

The Montana Environmental Training Center (METC) strives to keep the costs of their sponsored training workshops and seminars at an "affordable" level for the many water and wastewater professionals who attend them and still maintain a quality training program. For many water and wastewater administrators, managers and operators, "affordability" is a term that is usually associated with the costs of operating and maintaining water and wastewater treatment systems. Training organizations must operate in a similar fashion.

METC's costs involve printing of training announcements and bulk postage for mailing the brochures to the hundreds of certified operators throughout the state of Montana. There are also costs associated with conducting the training programs - instructors' fees, facility fees, refreshment costs, instructional material and printing costs. There are costs associated with travel to get the training workshops to the various areas of the state (fuel for and maintenance of METC's van), and, as this Coordinator is experiencing, these costs continue to escalate each year. The cost of bulk postage increased this past year. Printing charges have increased 1 cent per page, too. This may not seem like much, but when one considers the thousands of brochures that go out each year, the cost difference becomes one that must be factored into the costs of training.

METC has kept training seminar fees to a minimum, but, as has been pointed out, increased costs for operating and maintaining these workshops needs to be addressed. In the past, METC has brought in out-of-state experts, at great expense, to share their expertise and knowledge in various areas of environmental quality with those attendees at the workshops. Most often, these METC incurred costs were not included in the fees that attendees were charged for the seminars. METC wants to continue to bring quality training to those water and wastewater professionals in the state of Montana. As we look to the future, we hope that this will be accomplished with minimum increases of workshop fees.

As coordinator for METC, I've had some wonderful opportunities to just "chat" with many of the operators, managers and administrators attending these seminars and to get some insight into some of their concerns when it comes to fees for workshops. Some have indicated that they are willing to pay increased fees for these training seminars, even to the point of expanding 1- day workshops to 2 days just to get the information that they need and want. Others have stated that they can't always get approval from their superiors due to budget restrictions. Certainly, administrators of treatment plants look to keeping costs down as does METC. However, a well informed experienced operator is "worth his weight in gold" when it comes to delivering clean water, be it drinking water to the community or wastewater effluent to the water conveyances. Training offers operations personnel opportunities to increase their level of knowledge concerning their system, of keeping current with new regulations and applied technology concerning treatment as well as environmental impacts. Even though managers and administrators may not be directly concerned with operations, an understanding of the systems' operations through training can bring administrators and operators together in a spirit of cooperation to supply clean water to communities and the environment. Can we afford **not** to factor these types of training benefits into the costs of "operating and maintaining" water and wastewater systems?

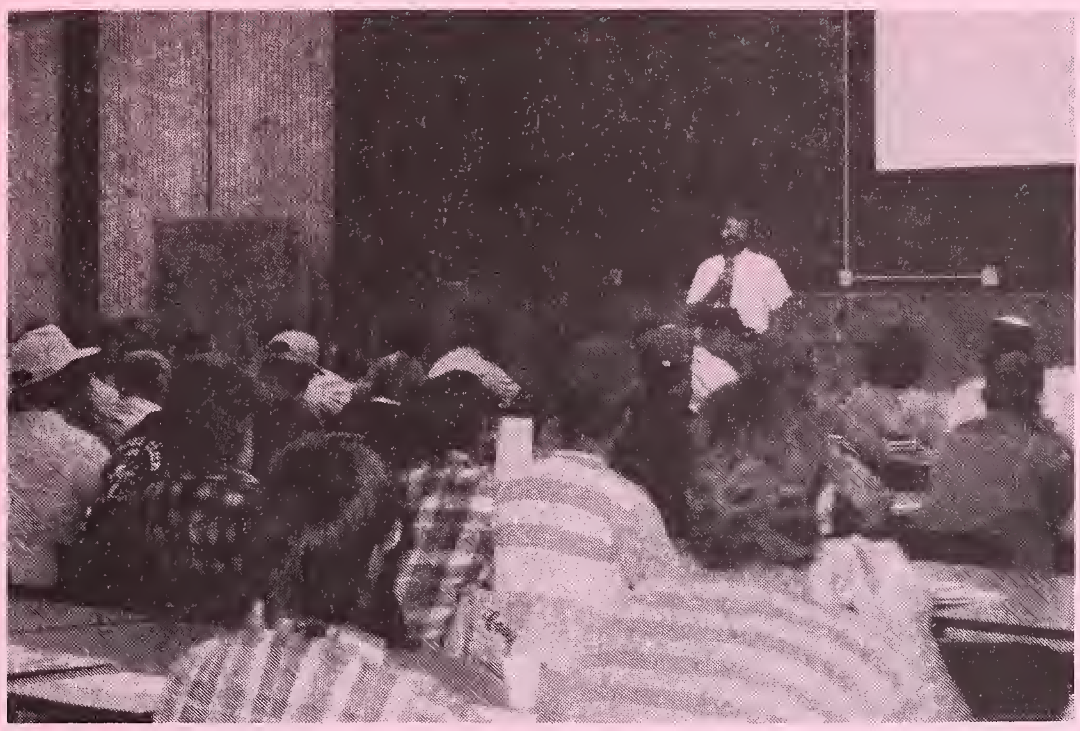
We need knowledgeable and informed operators to maintain these treatment systems. Contamination and pollution of our waters are issues that we need to take seriously. They impact not only human health but the health of our environment, too. Environmental training provides opportunities to gain the knowledge necessary to promote not only the efficiency of treatment operations but an understanding and awareness of how water quality impacts us personally and our environment. It's a long-term investment we need to consider seriously when budgeting for "operation and maintenance" of our treatment systems.

Scenes from the 1991 Water School

Registration frenzy!

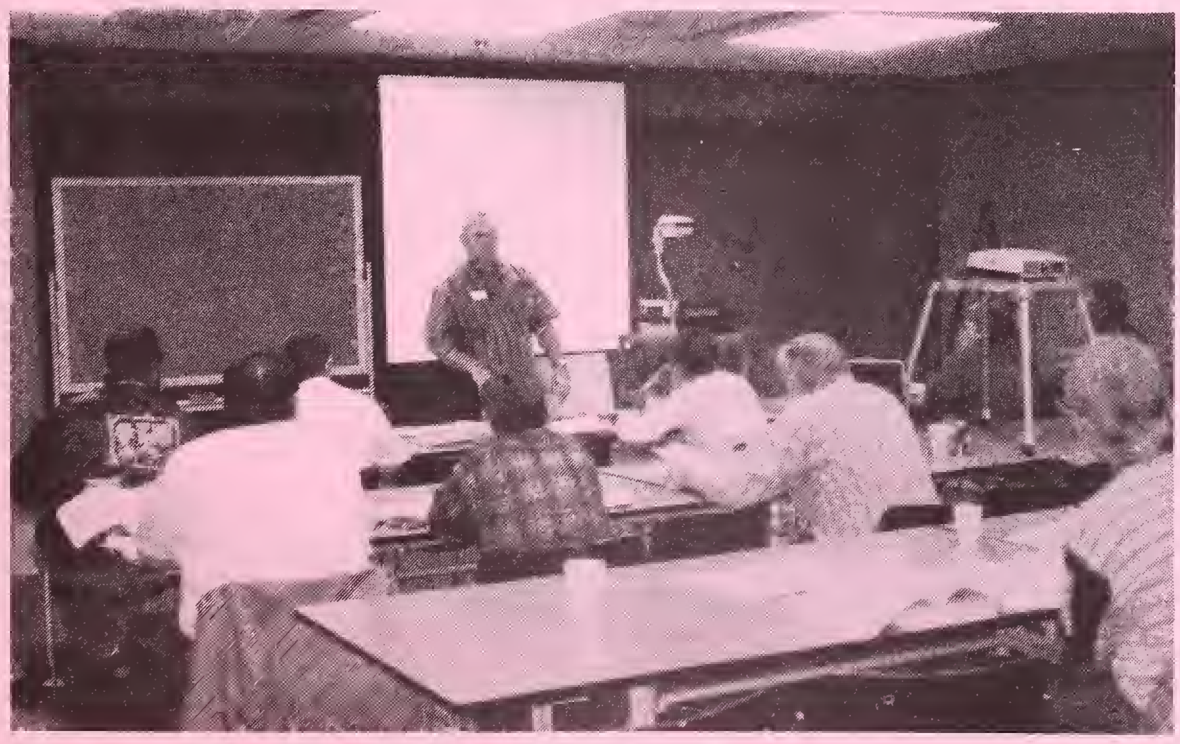
Opening session - over 160 strong!

Checking out AWWA and WPCA educational materials.



Kevin Deenan presents "Repairing the Past/Protecting the Future"

Ron Schuyler shows operators what's crawling in wastewater.



Ray Wadsworth helps with math in SOS.

FIRST SRF LOAN MADE

by Karen Bucklin Sanchez
Environmental Engineer

Governor Stan Stephens presents a check to George Fultz, Mayor of Fort Benton, to commemorate the new Montana SRF loan program. Fort Benton received the first SRF loan for $1,294,400 at 4% interest. The money is being used to make required improvements to the city's wastewater collection and treatment system.

The new Montana State Revolving Fund (SRF) Loan program kicked off this fall with the first loan made to the City of Fort Benton. The Montana SRF program is the "next generation" of funding for wastewater systems, following the federally-mandated end of the former Construction Grants program in 1987. The loans are a very low interest source of financing. For example, the Fort Benton loan is typical with an interest rate of 4%. The loan program is called a "revolving" loan fund because the loaned money will be available for funding projects in perpetuity. Montana communities borrow the money and repay the loan. The repaid funds are then available for other Montana communities to borrow, etc.

An award ceremony to commemorate the first loan was held on October 3, 1991. George Fultz, Mayor of Fort Benton, accepted a check from Governor Stephens. Also participating in the ceremony were Rep. Mark O'Keefe, Karen Barclay and Scott Anderson. Mr. O'Keefe carried the enabling legislation through the Montana legislature; and Karen Barclay and Scott Anderson are the representatives of the two departments which worked together to create and administer the SRF program - the Montana Department of Natural Resources (DNRC) and the Montana Department of Health and Environmental Sciences (DHES)/Water Quality Bureau.

The City of Fort Benton received an SRF loan for $1,294,400. The SRF money will be used to make improvements to the existing leaky lagoon system and to upgrade the city's lift station. Construction on the Fort Benton project began in September 1991 and is expected to be completed in the spring of 1992.

How much money can an SRF loan save a community over other types of low interest funding? If Fort Benton would have sold bonds or received a bank loan to fund the project, it would have increased the cost of the project by thousands of dollars over the cost of funding the project with the SRF loan. By comparing the total cost of the SRF loan with locally sold municipal bonds or a bank loan at 7% interest, it can be calculated that **the SRF loan saved Fort Benton $29,786 annually, which translates to a savings of $595,720 over the 20-year payback period!** In addition, by using the SRF program, the city received technical assistance from the Water Quality Bureau/DHES on review of the system design, oversight of construction practices, technical advice on system operation and maintenance, advice on financial and accounting procedures and on initiating a Sewer User Ordinance and User Charge System. The DNRC also provided assistance on financial aspects of the program.

What types of projects can be funded with an SRF loan? The long-term goal of the Montana Wastewater Treatment Revolving Fund Act is to maintain, restore and enhance the chemical, physical, and biological integrity of Montana's waters for the benefit of the overall environment and the protection of the public health. This goal is being addressed through the types of projects which receive direct loans from the Montana SRF. For example, of the first-round SRF projects, the Missoula and Bigfork collector projects provide sewage collection and treatment for residences with failing on-site systems known to cause public health hazards and degradation of groundwater quality; the Kalispell, Fort Benton and Gardiner projects replace existing wastewater treatment systems which have outlived their useful life, are violating their discharge permit standards and are currently causing unacceptable levels of pollution. Other acceptable types of projects include stormwater collection and disposal systems, separation of combined sewers, infiltration/inflow correction and nonpoint sources pollution prevention and mitigation.

If you would like to learn more about the SRF loan program, contact Scott Anderson, Water Quality Bureau, Department of Health and Environmental Sciences, Cogswell Building, Room A-206, Helena, MT 59620, or phone (406) 444-2406.

MIKE HAGEL AND ESTHER NELSON RECEIVE 1991 OPERATOR'S MERITORIOUS SERVICE AWARDS

The American Water Works Association Montana Section awarded two Operator's Meritorious Service Awards in 1991. The recipients were Mike Hagel, City of Forsyth, and Esther Nelson, Nelson's Mobile Home Park in Bozeman.

Mike received his award in appreciation for and acknowledgement of his hard work and efforts dedicated to improving the performance of the drinking water treatment plant and operations of Forsyth's utilities as a whole. Mike and the rest of the staff at the City of Forsyth water and wastewater facilities provide a good example of how operations and management adjustments can turn around an otherwise poorly-performing facility.

Mrs. Nelson reacted conscientiously and with sincere concern for the welfare of water users at the mobile home park during Volatile Organic Chemical contamination discovery and investigation. Mrs. Nelson arranged for alternative drinking water and showering facilities, and has since connected to the City of Bozeman's water supply. The VOC contamination in the area is now a State Superfund Site and also impacts private wells.

* * *

Stan Nelson Honored

Stanley M. Nelson, long-time operator/manager of water and wastewater systems in the East Glacier area is being honored by the Small Systems Committee of the Montana Section American Water Works Association.

Stan has been involved in system management or operations since 1972, and maintenance or construction of systems for over 20 years. Stan is a self-employed heavy equipment operator and "fix-it" man working on water and sewer line repairs or "whatever needed" for public and private systems near East Glacier since 1966. Stan has also been recognized as a "Friend of Rural Water" by Montana Rural Water Systems, Inc.

Our hat is tipped to you Stan! Thank you for so many years of dedication and service.

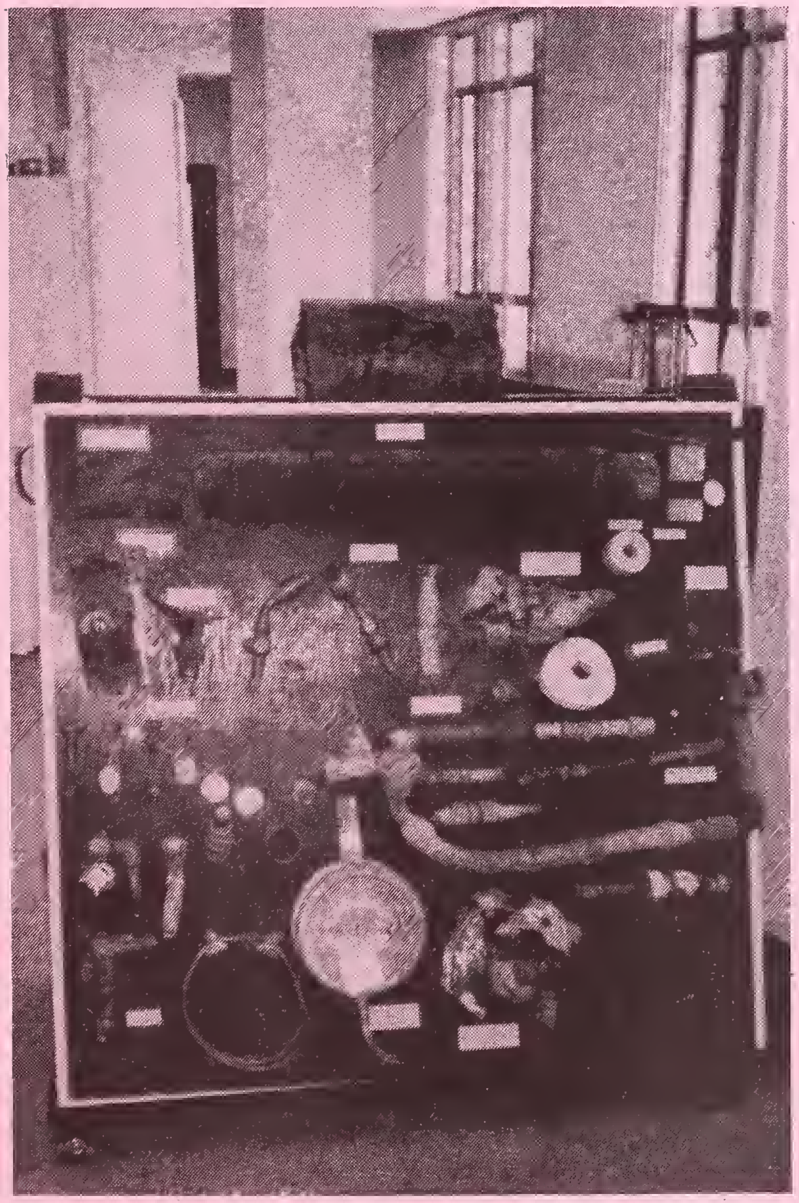
GREAT FALLS EDUCATES THE PUBLIC . . . ABOUT PROPOSED RATE HIKE

Last year, the City of Great Falls embarked on an enthusiastic public education program to explain its proposed utility rate hike to users. Newspaper, T.V. and an "Open House" were all used to help consumers learn about the water and wastewater utilities and their financial needs.

The education effort included a special newspaper supplement on several city-wide issues, with a detailed question and answer segment on the proposed utility rate increase and an explanation of the planning process involved in establishing the proposed rates.

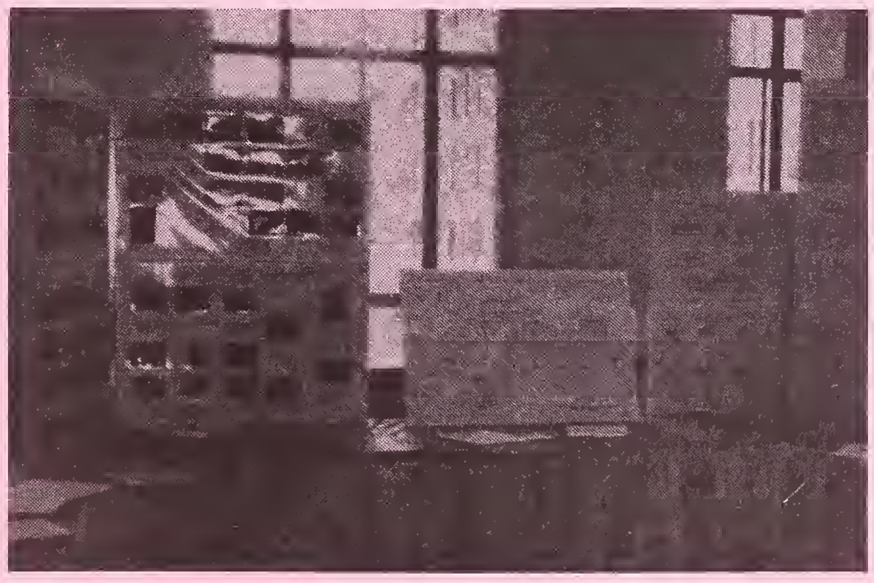
The city then sponsored a day-long "Open House" complete with displays and direct access to city staff in one-on-one conversation. Informative brochures on water conservation, water and wastewater treatment and Great Falls' rate structure were provided to consumers. State regulators and a representative of the PSC were also available to answer consumer's questions. Although turnout by Great Falls residents was less than hoped, the effort was still a success. A local T.V. station's coverage of the Open House provided valuable information on the effort during the 6:00 news broadcast.

Below: Examples of pipes and plumbing condition Great Falls encountered during replacement.



Below: Public Utilities Director Erling Tufte is interviewed by local T.V. station.

Below: Displays and information on utility improvements, treatment plants, conservation and plans.



ALGAE CONTROL IN LAGOONS USING COPPER SULFATE

Proposed Water Quality Bureau Policy

Scott Anderson, WQB

Operators in some Montana communities have reported problems with excessive growths of algae in their wastewater treatment lagoons during the warmer time of the year. Copper sulfate, a chemical compound found to be effective in controlling algae in ponds and irrigation systems, has been suggested for use in wastewater lagoons. After investigating the implications of using this chemical, the Water Quality Bureau has proposed a policy prohibiting its use in wastewater lagoons for the following reasons:

1. Algae play a key role in the wastewater stabilization process through the generation of oxygen and the conversion of raw sewage into less objectionable material.

2. Copper is a toxic, deleterious, and bioaccumalative material to the environment. Discharge of the substance is prohibited by Montana Water Quality laws.

A wastewater treatment lagoon is a very complex biological system capable of meeting required treatment standards when designed, constructed and operated in accordance with accepted methods. In general, design criteria for lagoons were developed empirically rather than based on scientific theory. The microbiological mass which develops in a lagoon contains a multitude of different critters including aerobic and anaerobic bacteria, algae, molds, yeasts, and other organisms. Controlling the makeup and activities of these microorganisms is difficult if not impossible. It has been generally accepted that algae and bacteria together comprise the essential elements of a successful stabilization pond operation.[1] Bacteria break down the complex organic compounds into simple products which are then available for use by algae. Algae will produce significant quantities of excess oxygen during photosynthesis which is available to the bacteria for oxidative functions. The excess oxygen helps maintain an aerobic environment in the lagoon which promotes the growth of the more desirable aerobic organisms and reduces the likelihood of odors.

Algae-caused operational problems in wastewater lagoons relate to the plugging of piping and the fouling of discharge structures by long filamentous type algal growth. While copper sulfate might effectively eliminate this problem, desirable algal species would also be killed off in the process and are, in some cases, even more susceptible than filamentous types. Problems that could occur within the lagoon with use of copper sulfate include loss of needed oxygen resulting in reduced treatment of incoming wastes, odors, additional organic load from decaying algae and the accumulation of copper in the lagoon sludges.

Copper sulfate can have a deleterious effect on the environment. Bartley[2] reported that the acceptable levels of copper are very low in waters supporting a fishery. Water Quality Criteria indicates acceptable concentrations of copper not to exceed 18 ppb for acute toxicity in freshwater. Dosage levels of 0.1 to 0.4 ppm are needed to control algae and higher concentrations may be necessary due to inefficient application methods. An uncontrolled discharge of effluent to a receiving stream at this concentration would result in toxic conditions to trout and many aquatic organisms. Bartley also reported that studies of aquatic weeds found along a treated canal showed that copper was accumulated from surrounding waters by factors of 233 to over 2,800. Sludges collected from lagoons treated with copper sulfate will be restricted to cumulative loading criteria for copper prescribed by the new EPA Part 503 Sludge Regulations if the sludge is to be land applied.

The environmental problems associated with the use of copper sulfate would appear to override any gain received in operational improvements. Where practical, physical cleaning of structures is a potential alternative to the use of chemicals. Ultimately, cold weather and ice cover will kill off the algae on an annual basis.

References

1. *"Design Manual, Municipal Wastewater Stabilization Ponds."*,
US EPA Office of Research and Development, EPA-625/1-83-015 page 10, October 1983.

2. Bartley, T.R. *"Investigations of Copper Sulfate for Aquatic Weed Control", Research* Report No. 27, US Department of the Interior Bureau of Reclamation.

CONGRATULATIONS . . GREAT FALLS !!!

GREAT FALLS WASTEWATER TREATMENT PLANT WINS NATIONAL AWARD

The Great Falls Wastewater Treatment Plant was awarded the U.S. Environmental Protection Agency's 1991 Operation and maintenance Excellence Award. This National award was in recognition of the outstanding performance by Great Falls staff and management. They won the 1.0 to 10.0 MGD Secondary Treatment competition for EPA Region VIII, and then won the national competition. The plant is operated by Envirotech Operating Services. Great Falls was recognized at the National WPCF convention held in Toronto, Canada last October. We should all extend our congratulations to them on a job well done.

1992 U.S. EPA OPERATION & MAINTENANCE EXCELLENCE AWARD COMPETITION

The Water Quality Bureau has recently received material providing guidance for treatment plants wishing to compete for the 1992 awards. The nine categories of awards are defined by treatment type and flow capacity and are summarized in the following table.

CATEGORY TYPE	AVERAGE DESIGN FLOW CAPACITY		
	1.0 MGD or less	>1.0 - <10.0 MGD	>10.0 MGD
Secondary Treatment	S-S	M-S	L-S
Advanced Treatment	S-A	M-A	L-A
Non-Discharging Facility	S-ND	L-ND (>1.0 MGD)	
Most Improved Treatment Plant	MIP (5.0 MGD or less)		

Further information and the award applications can be obtained by contacting Dick Watson of the WQB at 444-2406, or Margaret Collins, the O&M Excellence Awards Coordinator, at 303-294-1168. To apply for an award you must complete the application and send it to the Water Quality Bureau **NO LATER THAN MARCH 20, 1992.**

PRELIMINARY ANNOUNCEMENT AND CALL FOR PAPERS

44th ANNUAL CONVENTION
WESTERN CANADA WATER AND WASTEWATER ASSOCIATION
Tuesday 13th to Friday 16th October 1992
WESTIN HOTEL, CALGARY, ALBERTA

OUR ENVIRONMENT: NEW CHALLENGES & NEW TECHNOLOGIES

The 1992 WCWWA Convention will be of interest to operators, engineers, manufacturers and others involved in the water and wastewater industry. The convention will be held simultaneously with MUNICIPAL EXPO and the program will include visits to Expo as well as a variety of tours, demonstrations and technical presentations.

If you are interested in presenting a paper, please submit an abstract of not more than 100 words to:

Mike Adkins, P. Eng.
Reid Crowther & Partners
7410 Blackfoot Trail SE
Calgary, AB T2H 1M5
Phone - (403) 253-3301
FAX - (403) 255-3189

Topical papers on practical Operatons and Maintenance are especially welcomed

For more information on our 1992 Convention please contact:

Doreen Munsie
Reid Crowther & Partners
7410 Blackfoot Trail SE
Calgary, AB T2H 1M5
Phone - (403) 253-3301
FAX - (403) 255-3189

INCLUDE US IN YOUR 1992 PLANS NOW!!!!

IMPORTANT INFORMATION

!!! COMPUTERIZING WATER SUPPLIERS !!!

Owners and operators of Public Water Supplies will soon receive (or already have received) an important mailing from the Water Quality Bureau.

In order for the data management system at the Water Quality Bureau to accurately track and credit water system samples, we need your help with your system's data inventory on our computer database.

Specifically, we must both agree on an identification number to assign to each well or surface water source for each public water system. This information is critical for crediting VOC, pesticide, and vulnerability assessment results to the proper source.

A consistent identification system is essential for your compliance and for reducing headaches caused by improper handling of results. When you receive the copy of what our inventory has for you PLEASE review it, change what is inaccurate, and return it to us.

Your cooperation is most appreciated and will be well-worth your time!

IN APPRECIATION . . .

Glasgow Operators: Brady Anders, Duke Nieskens, and David George.

There are a lot of operators in Montana who never make much noise and don't get much notice for doing their jobs and doing them well. It takes a special kind of person to meet the desires of their community with the growing responsibilities of their jobs as operators. These individuals are the unsung heroes of the water and wastewater industry, and Montana could not get along without them.

Three such special people are the operators for the City of Glasgow: **David George, Duke Nieskens and Brady Anders** are all dedicated professionals who deserve a lot of respect from the community they serve. These operators strive to do the best job possible and continually keep an eye-out for where improvements can be made.

We appreciate you and all that you do. Way to go Glasgow!!

NEWS . . . ABOUT CERTIFICATION

By: Rosemary Fossum, Water Quality Bureau Certification Officer

JUNE 30, 1992, MARKS THE END OF THE THIRD TRAINING BIENNIUM, not the second as previously reported. Continuing education credits were required for renewal for the first time on July 1, 1988, and every EVEN NUMBERED YEAR thereafter. The **fourth training biennium** begins July 1, 1992, and ends two years later on June 30, 1994. The department approved 117 training courses for continuing education during the first two-year period, 169 during the second, and has approved 120 so far this two-year period. These numbers are exclusive of correspondence courses approved for CEC credit, currently some 48. CEC's have focused attention on the importance of good operation and have achieved dramatic improvement in operator professionalism. The CEC's required will double during the next two-year period for Class 1-4 operators. Beginning July 1, 1992, Class 5 operators will require .4 CEC's (four hours) every two years. **Renewal notices will be out mid-April.**

THE WATER AND WASTEWATER OPERATOR CERTIFICATION ADVISORY COUNCIL welcomes Robert Cottom, Dillon's Water Superintendent, to a six-year term on the council. Since 1977, Bob has been certified Class 1 in water distribution and treatment and Class 3 in wastewater. Our heartfelt appreciation to Bob Butcher, Chief Chemist of the Billings water and wastewater plants, for six years of valuable service on the council.

THE NEWLY COMPLETED FIVE-CHAPTER INDUSTRIAL WASTEWATER TREATMENT OPERATORS' MANUAL for oil refinery wastewater operators has received rave reviews from the WQB's technical staff. Hats off to chapter authors Robert Olsen, Conoco; Bernard Gieser, Cenex; Dr. Howard Peavy, MSU; Tom Schug, Exxon; and Larry Field, Exxon, and to the oil refineries themselves who are footing the bill for binding and printing this study material.

ARM 16.20.217(5) READS: "Measurements for pH, temperature, turbidity, and residual disinfectant concentrations for a community water supply must be conducted by a party certified under the provisions of Title 37, Chapter 42, MCA. (certified operator). Samples for total coliform analysis for a community water system must be collected by a party certified under the provisions of Title 37, Chapter 42, MCA. Measurements for total coliform, fecal coliform, and HPC must be conducted by an approved laboratory."

NEW BACTERIOLOGICAL WATER SAMPLE FORMS REQUIRE THE NAME AND NUMBER OF THE CERTIFIED OPERATOR.

PASSING EXAMINATIONS FOR FULL CERTIFICATION OR OPERATOR-IN-TRAINING (OT)

9/27/91

Class 1:
Thad Bassett, Melstone, 1B-ot
Antonio Bonney, Butte, 1A
Francis Bolton, Butte, 1A/1B-ot
Eugene Connell, Missoula, 1C-ot
Joanne Emrick, Kalispell, 1C
Bruce Evans, Butte, 1C-ot
Jay Frandsen, Helena, 1B-ot*
Larry Hayes, Bozeman, 1C
Bryon Long, Jardine, 1B-ot*
John Manion, Kalispell, 1B-ot*
Bernard McDonald, Great Falls, 1A
Lee Michalsky, Butte, 1A/1B-ot
Rick Mitchell, Forsyth, 1B-ot
Steven Moore, Culbertson, 1B-ot
Richard J. Paugh, Chinook, 1B-ot
Wesley Rasmussen, Miles City, 1B-ot
Robert Seaman, Sidney, 1B-ot*
William Shaw, Lewistown, 1B-ot
Cliff Singer, Jr., Crow Agency,1B
Timothy Sloughter, Helena, 1B*
Henry Snedigar, Culbertson, 1B*
Susan Strand, Laurel, 1B
John Williams, Missoula, 1C
John Wilson, Kalispell, 1C-ot*
Gary Workman, Billings, 1B

Class 2:
Peter Burtchell, Norfolk, Va-2C-ot
Ronald Flack, Livingston, 2A3B-ot
Martin Glueckert, Canyon Ferry, 2C
Don Periman, Great Falls, 2B
Jeffrey Rumple, MAFB, 2C
William Scott, Deer Lodge, 2B-ot*
Clint Tinsley, Livingston, 2C*

Class 3:
James Beck, Townsend, 3A4B-ot
Roger Bevolden, Harlem, 3A*
Peter Burtchell, Norfolk, Va-3C-ot
Jeffrey Flansaas, Bozeman 3A4B-ot*
Tim Goldsberry, Bridger, 3C*
Arthur Holum, Scobey, 3A4B*
Randy Johnston, Three Forks-3A4B-ot
Jerry Lacy, Thompson Falls, 3C-ot
William Leonard, Whitefish, 3A4B
Ray Mayfield, Three Forks, 3A4B-ot*
Charles Matt, Polson, 3A
William Scobille, Basin, 3C-ot
Bruce Steffen, Red Lodge, 3A*
Dave Sund, Thompson Falls, 3C*
Kenneth Truesdell, Townsend, 3A4B
Woolridge, Michael, Havre, 3C

Class 4:
James Beck, Townsend, 4C-ot
Lyle Fogerty, Great Falls, 4A*
Darel Hauge, Turner, 4C
Jon Horning, Dillon, 4AB
Randy Johnston, Three Forks, 4C-ot
Helen Kendall, Hilger, 4AB-ot
Guy Leonard, Crow Agency, 4AB
Ray Mayfield, Three Forks, 4C-ot
Samuel Melston, Medicine Lake, 4C-ot
Ed Michael, Park City, 4C
Michael Pearson, Brady, 4AB/4C-ot
Roger Portra, Brocton, 4AB*
Philip Rambur, Miles City, 4AB/4C
Daniel Rouns, Brady, 4C*
Royden Robinson, Kalispell, 4AB
William Scoville, Basin, 3C
Mike Stewart, Columbia Falls, 4AB
Ronald Strawn, Charlo, 4AB
John Taillie, Norris, 4AB
John Wendt, Lima, 4AB

Class 5:
Horus Brailsford, Emigrant
John Erickson, Augusta
Stanley Huhtala, Chester
Kenneth Marshall, Three Forks
Stephen Morehouse, Dillon
Robert Pedersen, West Yellowstone

* Denotes those previously certified in another classification type

MATH REVIEW FOR CERTIFICATION EXAM

Sponsored by

WATER QUALITY BUREAU
March 13, 1992
6:30 p.m.

1. HAVRE
Northern Montana College
Room 104
Hagener Science Center

2. MILES CITY
Miles Community College
Room 106
2715 Dickinson

3. HELENA
Cogswell Building
Room C-209 - Side 2
(Use Broadway entrance)

4. GREAT FALLS
NMC Great Falls Center
Room 105
1211 NW Bypass

5. MISSOULA
Liberal Arts Building
Room 102
University of Montana

6. KALISPELL
Business/Social Science Building
Room 132
Flathead Valley Community College
777 Grandview Dr. (Whitefish Hwy.)

7. Billings
Wastewater Treatment Plant
Administration Building Conference Room
(Entrance to plant is just west of
Highway 87 east bridge)

* *

This session is intended to review basic math with those people taking class 1-4 certification examinations on March 14, 1992. Those attending should bring their computation study sheets (supplied to applicants for certification) and their questions about those and similar computation exercises.

NOTE: The location for the Billings review session is not the same as for the certification exam.

For more information call: Rosemary Fossum, Water Quality Bureau, 444-2691.

CERTIFIED MONTANA LABORATORIES

	CERTIFIED FOR					
LABS	MICRO-BIOLOGICAL	NITRATES	INORGANIC	ORGANIC	RAD	VOC'S
PUBLIC HEALTH LAB (HELENA)	◆	◆	◆	◆		◆
MONTANA ENVIRONMENTAL LAB (KALISPELL)	◆	◆				
MISSOULA CITY COUNTY HEALTH DEPT (MISSOULA)	◆					
* AMATEC (BILLINGS)	◆					
LEWISTOWN WATER QUALITY LAB (LEWISTOWN)	◆					
ENERGY LABORATORIES (BILLINGS)		◆	◆	◆	◆	◆
MSE, INC (BUTTE)		◆	◆			
CHEN-NORTHERN (BILLINGS)		◆	◆			◆
MT BUREAU OF MINES & GEOLOGY (BUTTE)		◆				
INTERMOUNTAIN LABS (BOZEMAN)				◆		◆

ADDRESSES & PHONE NUMBERS

Public Health Lab
Cogswell Building, Room B105
Helena, MT 59620
Phone: 444-2642

Montana Environmental Lab
376 West Washington
P.O. Box 1876
Kalispell, MT 59901
Phone: 755-2131

Missoula City-County Health Department
301 West Alder
Missoula, Mt 59801
Phone: 721-5700, Ext. 365

* AMATEC
P.O. Box 20873
Billings, MT 59104
Phone: 248-2159
* *(Temporary Provisional Status)*

Lewistown Water Quality Lab
P.O. Box 820
Lewistown, Mt 59457
Phone: 538-3270

Energy Laboratories, Inc.
1077 South Broadway
P.O. Box 30916
Billings, MT 59107-0916
Phone: 252-6325

MSE, Inc.
Analytical Laboratory
106 South Parkmont
Industrial Park
Butte, MT 59701
Phone: 494-1403

Chen-Northern, Inc.
600 South 25th Street
P.O. Box 30615
Billings, MT 59107
Phone: 248-9161

Montana Bureau of Mines
Analytical Division
Montana College of Mineral Science &
Technology
Butte, MT 59701

Intermountain Laboratories, Inc.
910 Technology Boulevard
Bozeman, MT 59715
Phone: 586-8450

MSAWWA/MWPCA WEEK

IN

BILLINGS

Billings hosts a week's worth of activities culminating with the annual MSAWWA/MWPCA Conference. On Monday and Tuesday (March 30th and 31st) MSAWWA hosts a regional meeting for the sectional officers from our region. Officers from sections in Iowa, Minnesota, Nebraska, North Dakota, South Dakota and Montana will meet to exchange information pertaining to national and sectional AWWA activities.

On Wednesday, April 1, 1992, a preconference workshop will be held on stress management. According to Dr. Kathleen Tandy, this workshop will help you learn *"How to do everything you have to get done and not go nuts."*

The conference (April 1st, 2nd, and 3rd) will provide a variety of technical sessions. Vendors will display the latest equipment and services on the market and be available to discuss potential applications at your facility (see agenda). After the awards banquet, we will be entertained by one of Billings finest musical comedy groups, ***The Calamity Jane Players.***

A spouses' program will be available. A couple of short presentations are being planned on Thursday. Plenty of time is being reserved for people to enjoy Billings' shopping and sight-seeing.

So register early! Complete the attached registration form for the preconference workshop and/or the conference. A block of rooms has been reserved at the Billings Plaza Holiday Inn. Call 1-800-637-3670 for reservations and mention you are with the AWWA.

SEE YOU IN BILLINGS!

PRECONFERENCE SEMINAR

LIFESTYLE MANAGEMENT WORKSHOP

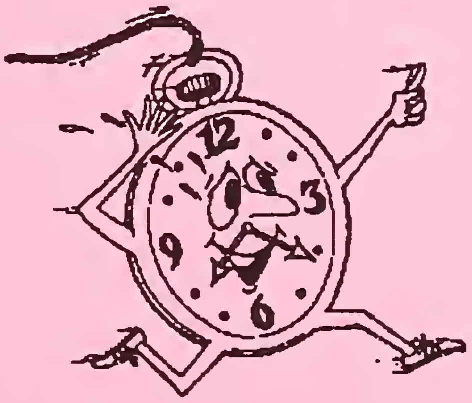
The Montana Joint Education Committee of AWWA/WPCA invites you to attend a Stress Management seminar to be held in conjunction with the annual Montana AWWA/WPCA Conference.

Dr. Kathleen Q. Tandy, PhD, with over 15 years as a psychotherapist, will be the guest speaker. The seminar will be held on **Wednesday, April 1, 1992 from 9:00 AM to 3:00 PM** (one hour for lunch on your own) at the **Holiday Inn Plaza in Billings**. The cost is **$40.00 and 0.5 CEC's** will be credited for attendance. The AWWA/WPCA conference is slated for April 2 and 3 at the same location. **Please note that you may register for both the preconference seminar and the AWWA/WPCA conference at the same time, although separate registration is required for each and separate CEC's are credited for each.**

Who should attend? Operators, managers and engineers not only experience the stresses and strains common to everyone, they also experience stress unique to the water and wastewater industries. The need to juggle the requirements of regulations, administrators and deadlines at work, while maintaining a private life is a familiar concern to all of us in the water and wastewater industries. Stress costs each business and organization enormously in terms of lost or unproductive employee hours.

What will be taught? This workshop will point out that the destructive consequences of stress are not inevitable; they often result from ineffective management of stressful events. Dr. Tandy will teach how to recognize your stress level and how to manage this stress in order to be a productive and fulfilled person. In other words; "How to do everything you have to get done and not go nuts"!!

Don't miss this workshop! It will be fun and provide valuable information.



Join us in attending this preconference seminar!

MONTANA SECTIONS
AMERICAN WATER WORKS ASSOCIATION AND WATER POLLUTION CONTROL ASSOCIATION

1992 ANNUAL CONFERENCE

April 1, 2 & 3, 1992
Holiday Inn Billings, MT

Wednesday April 1, 1992

9:00 - 3:30 Special JEC Preconference Seminar:

LIFESTYLE MANAGEMENT WORKSHOP
Dr. Kathleen Tandy

Noon - 5:00 Registration for MSAWWA/MWPCA Joint Conference

6:30 - 8:30 Ice Breaker Reception in Vendor Area

Thursday April 2, 1992

7:00a Registration

Joint Sessions

8:00 CALL TO ORDER WELCOME INVOCATION RESPONSE

8:30 TAKE CONTROL OF YOUR LIFE!
Keynote Address - Dr. Kathleen Tandy

9:15 FINANCING CAPITAL IMPROVEMENTS
Carl Christensen, Asst. PUD, City of Billings

9:45 Break

10:00 PRESERVING PUBLIC RELATIONS DURING SERVICE DISRUPTION
Tim Berry, P.E., Morrison-Maierle/CSSA

10:45 SHARING THE WEALTH: INTERLOCAL ASSISTANCE AGREEMENTS
Ralph Dunahoo, Supt. City of Conrad

11:30 LUNCHEON: GUEST SPEAKERS ED SINGLEY, AWWA NATIONAL PRESIDENT AND CHUCK SORBER, WEF PRESIDENT ELECT

Concurrent Sessions

1:30 Water - SDWA REGULATORY UPDATE Jim Melstad, Manager, Drinking Water/Subdivision Section, Water Quality Bureau

Wastewater - CLEAN WATER ACT REAUTHORIZATION: A MESSAGE FROM SENATOR MAX BAUCUS Dan Fraser, Chief, Water Quality Bureau

2:00 Water - ESTABLISHING A BACKFLOW AND CROSS-CONNECTION PROGRAM -Bob Ward, Mountain Water Co.

Wastewater - THE MICROBIOLOGY OF WASTEWATER

2:45 Break

3:00 Water - SLIMY CHARACTERS IN DISTRIBUTION SYSTEMS: COLIFORM AND BIOFILM GROWTH
Dr. Gordon McFeeters, MSU Department of Microbiology

Wastewater - THE MICROBIOLOGY OF ACTIVATED SLUDGE

3:30 Water - WHAT'S CRAWLING OUT OF THE WELL? HYPORHEIC STUDIES AT YELLOW BAY
Bonnie Ellis, Yellow Bay Experiment Station

Wastewater - SELECTORS IN ACTIVATED SLUDGE TREATMENT: AN UPDATE OF THE BILLINGS PROJECT Joe Steiner, City of Billings Water and Wastewater Supt.

4:00 Water - IS YOUR GROUNDWATER UNDER THE INFLUENCE OF SURFACE WATER?
Donna Jensen, Water Quality Bureau

Wastewater - NONDEGRADATION: RULE AND PERMIT CHANGES
Dr. Abe Horpestad, Technical Studies and Support Section, Water Quality Bureau

4:30 Sessions Adjourn

7:00 JOINT MSAWWA/MWPCA BANQUET AND AWARDS

Friday, April 3, 1992

Joint Sessions

8:00 CONFINED SPACE ENTRY AND RESPIRATORY PROTECTION
Dan Toney/Joe Luizza, MT Bureau of Safety

9:00 EDUCATING THE PUBLIC - HELP ON POLISHING THE IMAGE
Panel Discussion with Kristi Kline, City of Havre and Joint Public Education Committee; Mary Ellen Wolfe, Water Awareness Month/Western Watercourse; Mike Patterson, Butte.

10:00 Break

Concurrent Sessions

10:15 Water - THE GLOW IS NOT HEALTHY: RADON IN DRINKING WATER Gary Lynch, Mtn. Water Co. (subsidiary of Park Water)

Wastewater - DO WE ACCEPT ANTIFREEZE? PRETREATMENT PROGRAMS AND ACCEPTANCE OF WASTES AT POTWs Tim Hunter, Wastewater Division Supt., City of Missoula

11:00 Water - LEAD AND COPPER Gary Lynch Mtn. Water Co. (subsidiary of Park Water)

Wastewater - NON-POINT SOURCE POLLUTION Jack Thomas, Environmental Program Supervisor, WQB

12:00 Luncheon and Entertainment

1:30 MSAWWA/MWPCA ELECTIONS AND BUSINESS MEETING - EVERYONE WELCOME!!

* PRE-REGISTRATION FORM *

1992 ANNUAL MSAWWA/MMPCA CONVENTION
April 1, 2, and 3, 1992
Billings, Montana

Pre-Registration information must be received by March 25, 1992! Make check payable to the MSAWWA/MWPCA Host City Committee and mail it along with the following information to:

MSAWWA/MWPCA Host City Committee
P.O. Box 31318
Billings, MT 59107

Name ____
(Last) (First) (Middle Initial)

Title ____

Organization ____

Mailing Address ____

City, State, Zip ____

Spouse/Guest Name (if Attending) ______________________________

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* REGISTRATION FEES *

Preconference Seminar "Lifestyle Management" Workshop	$40.00 __________
AWWA and/or WEF (WPCF) Members	$85.00 __________
AWWA and/or WEF (WPCF) ;Members (one day only)	$60.00 __________
Non-Members*	$95.00 __________
Non-Members (one day only)	$70.00 __________
Spouse/Guest (all meals included)	$28.00 __________
Additional Luncheon Tickets: Thurs.____ Fri. ____	$ 8.00 __________
Additional Thursday Banquet Tickets	$18.00 __________
TOTAL REMITTANCE	$ ____________

*Non-members joining now enclose completed membership application and one year's dues; then register as a member.

WPCF BOARD APPROVES NAME CHANGE

News Release
Water Pollution Control Federation

(Toronto, Ontario) In an overwhelming majority, the Water Pollution Control Federation (WPCF) Board of Control voted to change the name of the Federation to the WATER ENVIRONMENT FEDERATION.

Over eighty percent of the Board approved the name change at the WPCF Board of Control meeting held Sunday, October 6, 1991, during the organization's annual conference and exposition.

"The purpose of the name change is to solve the problems that our last name had," said Roger Dolan, WPCF 1991-92 president. "To the outside world, our people came to be seen as 'pollution people'. It was an image issue. Also, in today's world--even if you accurately interpret the old name--the word 'control' just isn't good enough. We don't control pollution anymore, we eliminate it. That's why we changed," he added.

The new Federation name represents the third such change in Federation history. Originally formed in 1928 under the name Federation of Sewage Works Associations, the organization changed its name in 1950 to the Federation of Sewage and Industrial Wastes Associations. In 1960, the name changed to WPCF to reflect the changing times and the Federation's expanded goals.

"Ultimately the Federation name is the face we present to the outside world. The heart and soul of the organization remains the same," said Dolan.

The new name, Water Environment Federation, becomes effective immediately. The Federation will begin changing the name of its publications, products, and services over the next few months.

The Water Environment Federation is a not-for-profit technical and educational organization founded in 1928. Its mission is to preserve and enhance water quality worldwide. WEF members are 38,00 water quality specialists from around the world, including civil, chemical, and environmental engineers, biologists, government officials, treatment plant managers and operators, laboratory technicians, college professors, students, and equipment manufacturers and distributors.

Montana Mourns the Loss of Mark Richardson

On November 16, 1991, Mark Richardson of Miles City died. Mark's passing leaves a large void in many operator and industry organizations.

Mark was chairman of the Water and Wastewater Operators Advisory Council and was also serving on the Advisory Council for the Montana Environmental Training Center. Mark had served on the executive board of the Montana Water Pollution Control Association as well. Mark's career began as a wastewater plant operator and grew through positions of Water and Wastewater Plant Superintendent and finally City Manager for Miles City.

Mark's energetic and wholehearted approach to the business at hand created a positive, can-do spirit so valuable in group dynamics. He recognized the importance of certification and training for operators, both for their own professional growth and for the greater goal of protecting the public health and the environment.

A scholarship fund has been established in Mark's name by the Kiwanis Club of Miles City. Guidelines for scholarships are yet to be established. Those wishing to contribute may send donations to:

Mark Richardson
Scholarship Foundation
c/o Tim Stoltz
#10 Newhardt Drive
Miles City, MT 59301

ANNUAL WPCF CONFERENCE

Kristi Kline, MWPCF Director

This years's conference was held in Toronto, Ontario, October 6 - 10, 1991. As in the past, the conferences have had a memorable occurrence, and this year's conference fulfilled the same claim. After 2 years of discussion, by a vote of the Board of control, the name of our Federation was changed. The new name will be the Water Environment Federation. Each state association has the option to change their name also, but it is not required. The Montana Association will be discussing this at our conference March 31 - April 2 held in Billings.

The Long Range Planning Committee has begun a two year *"visioning"* effort to carefully examine the future of the Federation. In this effort, visioning focuses on the value of the organization, what it has the capacity to do and what it is being called upon to do. In an effort to include member association members in this process, the Regional meetings held this year will involve this visioning process. The input from all six Regional Meetings will go back to the Long Range Planning committee and proceed from there.

The Federation is interested in broadening its scope to include more technical programs related to industrial waste treatment and serving the needs of industry in general. Several Federation committees are involved i n this process.

The Federation is also taking an active role in International relations and participation in several grant programs. One of the grants is the Eastern European Environmental Business Consortium. This is a grant funded in part by the U.S. Department of Commerce, to assist primary small and mid-sized environmental business to establish a commercial presence in Eastern Europe for the purpose of assisting with improvements in the region. Another grant, with funding from U.S. A.I.D., focuses on industrial pollution prevention with a scope of primarily technical assistance and training. If anyone would like more information on these grants, please contact the Federation office at *(703) 684-2400.*

The relationship between the MA's and the Federation is a very important one. Every effort is being made to serve the member's needs and give information and assistance at the highest quality. It sounds like the computer problems encountered in the past, will soon fade away. A new, capable system will be on line this year. If you do continue to have any problems, please contact the office at *(703) 684-2400*, as they wish to resolve them as soon as possible.

A FOUR-ALARM PRIMACY FIRE

John B. Mannion, Executive Director

In matters of government regulation, we do not often get to pick our masters, but in the safe drinking water program the possibility of choice is at hand. The question is: do we want to be regulated and supervised by state agencies or by the US Environmental Protection Agency (USEPA)? If your answer is USEPA or if you but hesitate, go directly to the corner of the room and put on that tall pointy hat. Then, while sitting on the dunce's stool, you may telephone your friends and neighbors and warn them: The feds are coming! The feds are coming!

To define the issue, I have to use a bit of government jargon, so you are well advised to do whatever you do to stay awake while reading, say, the Federal Register. (I know one bureaucrat who does his reading on the patio in midwinter with his bare foot in a bucket of water.) Anyway, the question is primary enforcement responsibility--called primacy--and who has it.

The USEPA may convey to a state the right to exercise primary enforcement responsibility under the Safe Drinking Water Act (SDWA) if the state adopts regulations at least as stringent as the federal code and meets other criteria. In return, the USEPA grants the state a proportionate share of the funds it receives from Congress to enforce the regulations and administer the program. If the state fails to do its job properly, the federal government may--yea, verily, must--withdraw primacy and the funding carrot. And then the USEPA must enforce its regulations in that state and deal with all the public water systems it can find.

These have been the ground rules since the Safe Drinking Water Act was passed 17 years ago. Discounting the few states that delayed seeking primacy, the matter has not been a thermonuclear issue until now. Why now, you ask? The answer any long-suffering state would give you is that the combined requirements of the current and future regulations are beyond the capacity of state primacy agencies to fulfill, given the current and anticipated levels of federal and state funding for the program.

The Lead and Copper rule is widely thought to be the lead and copper straw that will break the state camel's back.

The Lead and Copper Rule is widely thought to be the lead and copper straw that will break the state camel's back. California has said it will not exercise primacy over this regulation, that USEPA may have the right and the pleasure back. This constitutes a double challenge to the federal government because USEPA does not recognize any such arrangement as partial primacy: either the state accepts the responsibility for all the regulations or it will get it for none.

Other states--perhaps a couple of dozen of them, I'm told--are seriously considering abandoning the field to the USEPA, saying, "Look, you are simply asking too much of us; the resources won't permit us to do the job; no one can do everything the law and regulations require, so we give up. You can have your primacy back. We're going fishing."

Now then, the prospect of a number of states taking that stance is enough to cause the stomach of the most light-hearted, laid-back federal official to erupt into ulcers. Even given the funds intended for state agencies, the USEPA cannot possibly implement the program. The agency does not have the resources, the staff, or the expertise to do what the states cannot. Chaos would reign; the program would bog down in muddy confusion; and the regulatory schedule would self-destruct. Mind you, USEPA cannot agree in public with such a prognostication. With faces as straight as your own, federal officials will claim that they most certainly will enforce the entire program. They must take that stance. But their legal obligation will not change reality: the USEPA is markedly less capable of doing the job than the states that are throwing up their hands in frustration and surrender.

It may seem that the situation in coming close to collapsing the system, breaking the back of the law. If you are of a mind to play hardball, you may want to push things in the direction they are going and let the chips fall where they may. That may be tempting, but it is only an illusion of relief. I know of no state agency, no federal official, and no AWWA participant in government affairs who believes that withdrawal of primacy from the states is desirable or that any good would come from USEPA taking over the field.

The pending crisis does raise a few brilliantly obvious messages that merit the attention of the USEPA, the Congress, water suppliers, and the public. First and foremost, we are seeing a compelling signal that the SDWA and the regulations it requires should be reconsidered and redefined within limits that ensure reasonable public health protection without imposing risk elimination policies that divert vast sums of money from known social and health problems in pursuit of emotional but theoretical concerns. (I do not believe that message will be taken seriously in Washington, not just yet.)

The second message is that more resources are needed to implement this complex and difficult program. A number of the states not making noises about returning primacy to the USEPA have instituted new sources of revenue or are rowing in that direction. In principle, no one likes the idea of a surcharge on water rates to finance the state drinking water program, but in practice, we are getting exactly that. So, it behooves AWWA sections and local water utilities to exercise some leadership and collaborate with the states in devising workable funding programs. If you reject that idea, just stand by; the federal government will be along shortly with a national surcharge program of its own in which you will have no say, which will cost you and your customers more, and which will be predictably less helpful and far more cumbersome and wasteful.

There are other messages in the current crisis--messages about small systems; about utilities having to deal with two regulatory programs (state and federal) with somewhat overlapping, sometimes differing requirements; about regulatory implementation schedules--but these will have to await another day and a roomier page. Besides, sufficient unto the day is the evil thereof. Take heed, members and friends, and preserve your state's primacy!

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CHANGES IN REQUIREMENTS FOR SAMPLE COLLECTION AND ANALYSES AT COMMUNITY WATER SUPPLIES

Administrative Rules of Montana (ARM 16.20.216) now specify certain water analyses and collection of water samples for bacteriological testing be performed by certified operators.

Measurements for pH, temperature, turbidity, and residual disinfectant concentrations must be conducted by a certified operator. A certified operator must also collect samples for total coliform analysis.

Please note these requirements only apply to COMMUNITY water systems.

If you are responsible for collection of bacteriological samples or if you perform the specified analyses at a community system but are not certified, contact Rosemary Fossum, Operator Certification Office, at 444-2691 or write to:

Rosemary Fossum
Water Quality Bureau
Cogswell Building, Room A-206
Helena, MT 59620

WHAT THE NEW PUBLIC WATER SUPPLY FEES MEAN TO YOU!!!

The 1991 Montana Legislature passed Senate Bill 407. This bill allowed the Department of Health and Environmental Sciences to assess fees to all public water suppliers. The Legislature specified fees for community water systems based on system size and established a flat fee for non-community systems. In November, the Board of Health and Environmental Sciences adopted the administrative rules necessary for implementation of the public water supply fees. The Water Quality bureau sent all suppliers a bill for their fee in December 1991 and January 1992. Until changed by the Legislature or Board of Health, these fees will be an annual assessment.

So what kind of bang will you get for your buck? All of the money generated from the fees will be designated for support of Montana's Public Water Supply Program and a state-wide groundwater characterization study. The main impetus for passage of the fee bill was to keep primacy (primary enforcement responsibility) for the Safe Drinking Water Act in Montana and out of the hands of EPA. In order to keep primacy, the Public Water Supply Program must staff-up monitoring and enforcement efforts to meet EPA's minimum requirements. In EPA's view, the program was not adequately enforcing the program even before initiation of the 1986 amendments to the Safe Drinking Water Act.

The Public Water Supply Task Force also felt Montana should continue its extracurricular activities (those not required for primacy) such as operator training, technical assistance, emergency response and engineering plan review (engineering plan review will be partially paid for through review fees). These programs were felt to be essential because they assist in compliance before a problem exists. An enforcement-only program reacts to an existing problem and is not the best protection of public health. As regulatory responsibilities increased in recent months, technical assistance and other preventive programs have had to take a back-seat. Through added staff and contracted services, the Public Water Supply Program intends to get more field-oriented assistance to systems, both preventive and as assistance to recognized problems.

The fees and staffing level proposed to the legislature were proposed to fund an "interim" program - one to get by with for a couple of years to see what the true dollar and staff needs would be. The Legislature cut both the number of FTE's approved for the Public Water Supply Program and the fees to be generated from suppliers from the proposed program - although we got more, we didn't get what the Task force recommended.

It is now clear that the currently approved number of full-time employees (FTE's) will be needed to implement rules that have already been adopted by the PWSP. These rules now include the recently adopted state versions of four EPA rules; the Total Coliform rule, the VOC rule, the Surface Water Treatment rule and the Public Notification rule. We also aren't sure what we'll be able to do with the complex Lead and Copper and "Phase II" rules, but we'll do our best to retain primacy and keep you advised of these new regulatory requirements.

We'll soon be advertising for three positions in the Field Services Program of training and technical assistance duties and are anxious to get those people put to use. As sufficient fees come in, we'll also be looking to other agencies such as Montana Rural Water Systems, Midwest Assistance Program, and others to provide contracted services for more field assistance.

The bottom line for all of this is that the Public Water Supply Program is in a period of lots of change and adjustment - just as public water supplies are in their struggle to comply with the new requirements. The next few years will be interesting and challenging for all of us as we strive to do what's best for Montana suppliers and consumers.

Chlorine Gas Hauling Requirement Changes

Federal Rules have now classified chlorine gas as a poison by inhalation. Because of this change, private utilities are now required to placard their trucks when hauling any quantity of chlorine gas. Also, they must carry the shipping papers which describe the gas as a poison by inhalation hazard. Haulers must also be insured if they haul chlorine gas across state lines or if they are hauling bulk chlorine gas in a vehicle that is rated at 10,000 GVW or more.

Government entities - any owned and operated by city, county or political subdivisions of government - are exempt from these requirements.

Any questions about these requirements can be directed to Mr. Ray Jenkins, 1Montana Department of Justice, telephone: 444-3300.

Remember . . .

AMERICAN WATER WORKS ASSOCIATION

ANNUAL CONFERENCE AND EXPOSITION

JUNE 18-22, 1992
VANCOUVER, BRITISH COLUMBIA

. . . Take advantage of the opportunity!

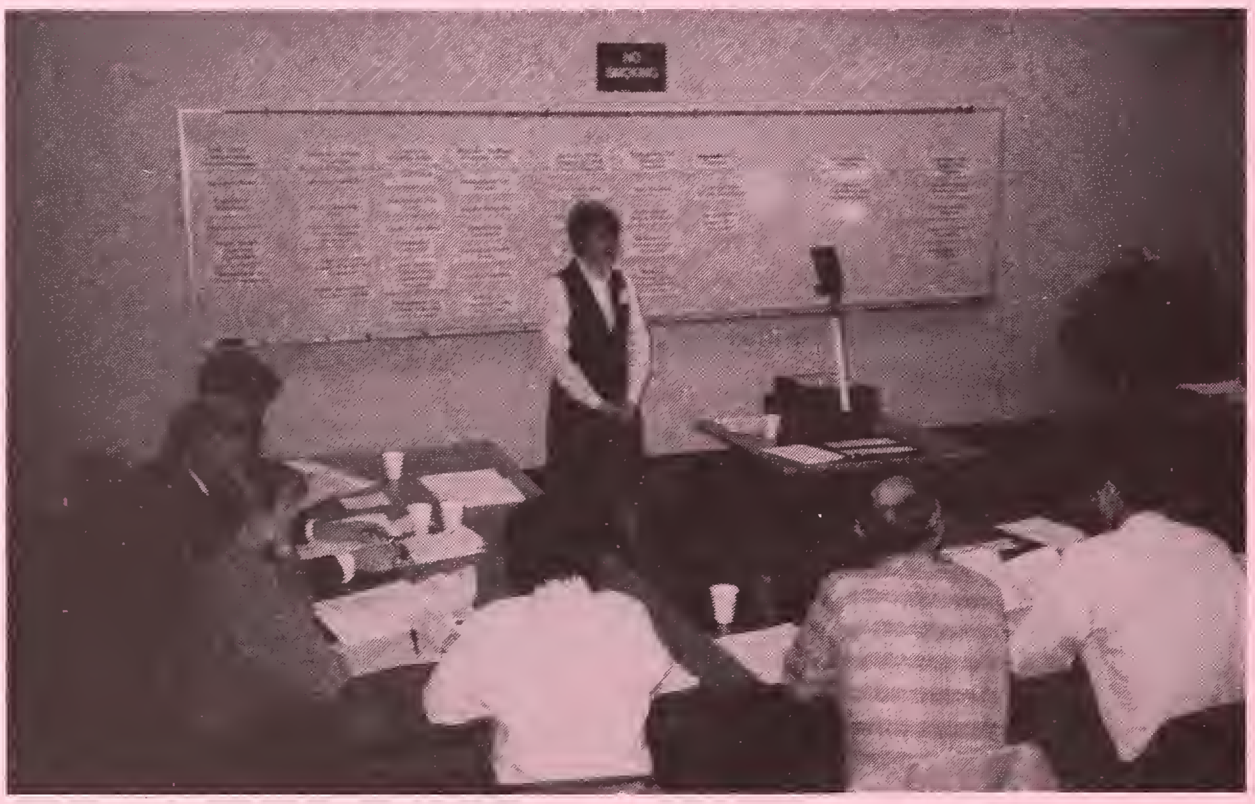
WATER QUALITY BUREAU LAUNCHES PROGRAM TO PREVENT GROUNDWATER POLLUTION

The Department of Health and Environmental Sciences recently took the first step toward preventing the pollution of underground drinking water sources in Montana.

"The byword for the 90's will be prevention," states Dan Fraser, Bureau Chief of the department's Water Quality Bureau. "Our first groundwater pollution prevention program is called 'Wellhead Protection'."

Wellhead Protection is a water quality protection program for public water supply wells. It is an unique EPA initiative, established by the 1986 Amendments to the Safe Drinking Water Act, that encourages local citizens to design their own protection program to meet the unique needs of their community.

Dennis Iverson, Director of the Department of Health and Environmental Sciences, selected 14 individuals from around the state to create a Wellhead Protection Program uniquely suited for Montana. "The Advisory Committee has representatives from state and local government agencies that currently safeguard groundwater supplies. In addition, other Montana citizens will represent small business, agriculture, and environmental interests," Iverson said.



Wellhead Protection Advisory Committee (Carole Mackin, Program Manager, standing)
Around table: Carolyn Colman, Wayne VanVoast, Debbie Madison, Melissa Tuemmler, Ed Hillman, Ward Swanser

Wellhead Protection Advisory Committee:

Valerie Counts
Arvid Hiller
Gerald Smith
Ward Swanser
Ed Hillman
Melissa Tuemmler
Debbie Madison
Wayne Van Voast

Arvid Hiller, Vice President and General Manager of Mountain Water Company, telling Wellhead Protection Advisory Committee about progress of wellhead protection in Missoula.

The members of the Wellhead Protection Advisory Committee are:

Valerie J. Counts, Park County Planning Director, Livingston
Diana C. Cutler, Board of Water Well Contractors, Helena
Ethel Harding, State Senator, Polson
Vern K. Heisler, Water Quality Bureau, Billings
Arvid M. Hiller, Mountain Water Company, Missoula
Ed Hillman, ESD, Inc., Livingston
Carolyn Janssen-Colman, Mayor, West Yellowstone
Debbie Madison, Ft. Peck Tribal Office, Poplar
Lyle Quick, Northern Plains Resource Council, Circle
Sam Rodriguez, Department of Natural Resources and Conservation, Regional Office, Lewistown
Gerald Smith, Rancher, Galata
Ward Swanser, Attorney, Billings
Melissa Tuemmler, City/County Health Department, Great Falls
Wayne Van Voast, Bureau of Mines and Geology, Butte

On October 4, 1991, the Wellhead Protection Advisory Committee met in Helena to hammer out a policy statement that will direct the creation of Montana's program. The draft policy statement went out for review by citizens who want to preserve the quality of Montana's groundwater. On January 10, 1992, the committee revised their recommendations based on the comments they received. At their next meeting on April 10, 1992, the committee will review the first draft of the Montana Wellhead Protection Program to see how well it implements the policy direction they have recommended.

RECOMMENDATIONS FOR IMPLEMENTING THE MONTANA WELLHEAD PROTECTION PROGRAM

WELLHEAD PROTECTION ADVISORY COMMITTEE
JANUARY 10, 1992

BACKGROUND

Wellhead protection is a program established by the 1986 Amendments to the Federal Safe Drinking Water Act to prevent contamination of groundwater used for public drinking water supplies. The legislation encourages states to design and implement their own Wellhead Protection Program. The Environmental Protection Agency is instructed to review and approve the state programs for federal funding if they meet the following criteria:

> Roles and duties of state agencies, local governments, and public water suppliers are clearly defined.
>
> Wellhead protection areas are determined based on reasonably available aquifer information.
>
> Within the wellhead protection areas, all sources of health threatening contamination that may pollute the groundwater are identified.
>
> Management of the wellhead protection areas strives to assure that public water supplies will not become contaminated.
>
> Contingency plans are developed to assure alternative drinking water supplies in case a well becomes contaminated.
>
> New well sites are selected to maximize yield and minimize potential contamination.
>
> The public is involved at all levels of plan development and implementation.

RECOMMENDATIONS FOR MONTANA'S WELLHEAD PROTECTION PROGRAM

Goal: To design a Statewide Wellhead Protection Program that is voluntary and emphasizes local control, provides coordination and technical assistance, provides information and education for those who get their drinking water from wells, and encourages public participation in the development and implementation of the program.

I. At the state level, the Wellhead Protection Program should provide:

  A. Coordination

1. Review local wellhead protection programs for consistency.
2. Coordinate with the existing state regulatory programs that assure clean up and monitoring of contaminant sources to give priority to problems arising in wellhead protection areas.
3. Coordinate the statewide program with similar programs on tribal lands.
4. Coordinate the statewide program with similar programs in neighboring states and Canada.

B. Technical Assistance

1. Introduce legislation to give those served by a community water supply the authority to establish and manage a wellhead protection area.
2. Aid local groups in gathering scientific data on their aquifer and defining a wellhead area that is both scientifically and legally defensible.
3. Suggest site specific strategies to effectively manage local wellhead areas.

C. Education

1. Provide training for local groups in establishing wellhead protection areas for their water supplies.
2. Distribute information describing current state regulatory programs and methods to create and manage a wellhead protection area.
3. Hold public meetings and use the news media to inform citizens on the issues addressed in a wellhead protection program.
4. Inform local groups of funding sources and methods to apply for them.

D. Risk Assessment

1. Evaluate Montana's aquifers to determine which are most vulnerable to contamination.
2. Assess the public water supplies to determine which systems are most vulnerable to contamination.
3. Evaluate sources of health threatening contaminants and determine where they are used and stored.

II. The Wellhead Protection Program at the local level should:

A. Initiate and coordinate the process of establishing a wellhead protection area.
B. Provide and administer the funding by applying for grants, etc.
C. Manage the wellhead protection area.

THE GROUND WATER FLOW MODEL

GROUND WATER

Ground water, the water we pump from the earth through wells or that which flows naturally from springs, is one of Montana's most valuable resources. Part of ground water's importance comes from its widespread availability and use. Fully 87 percent of community systems in Montana are supplied by groundwater, and 45 percent of our population depends on groundwater for drinking water supplies. It is the only source of water for nearly all of the state's farm and ranch families.

THE GROUND WATER FLOW MODEL

Ground water flow models are used to demonstrate ground-water movement principles. A model, constructed with a clear plexiglass front, allows observers to watch how the water that is introduced into the system moves and how the water is affected by obstacles such as a pumping well. The modes is 24 inches long, 12 inches high, and one inch thick.

The ground water flow model demonstrates two types of aquifers; an unconfined aquifer of white sand located just below the surface, and a confined aquifer of gravel located near the bottom. The aquifers are separated by a semi-impervious clay/sand layer.

Water is introduced into the model through two inverted quart jars located at each end. A vacuum pump is used to draw water from the wells. Blue, green, yellow and red dyes are added to demonstrate water movement patterns. The dyes also serve as visual tracers to show how contaminated water migrates.

WHO CAN USE THE MODEL

The model is intended for Montana educators including public and private school teachers, 4-H leaders, Boy and Girls Scout leaders, and other similar group leaders. Resource people may also find the model useful in presenting basic groundwater information at meetings.

GROUND WATER CONCEPTS

A surprising number of physical and chemical ground-water concepts can be demonstrated with the model. A manual that accompanies the model describes 28 concepts that a teacher can demonstrate. The following represent just a few of these concepts:

- Ground-water systems vary in size, ability to produce water, depth, rock material, water quality, and other characteristics.
- Ground water is related to atmospheric and surface water through the hydrologic cycle.
- Artesian (naturally flowing) wells are the result of aquifers under pressure.
- Types of rock material in an aquifer affect the rate of flow. (Water flows through coarse gravel much easier than through fine sand.)
- Human activities at or near the land's surface can contaminate ground water.
- Ground water is recharged by precipitation and snowmelt.

GROUND WATER EDUCATION PACKAGE

The model comes as a complete educational package. All the instructor needs to do is add water. The model is easy to use and demonstrate. Educational materials that accompany the model include:

- Ground water flow model user's manual;
- Additional ground-water activities for further classroom study;
- **Ground Water Issues and Answers** (reference);
- **Protecting Our Ground Water** (poster);
- Water videos

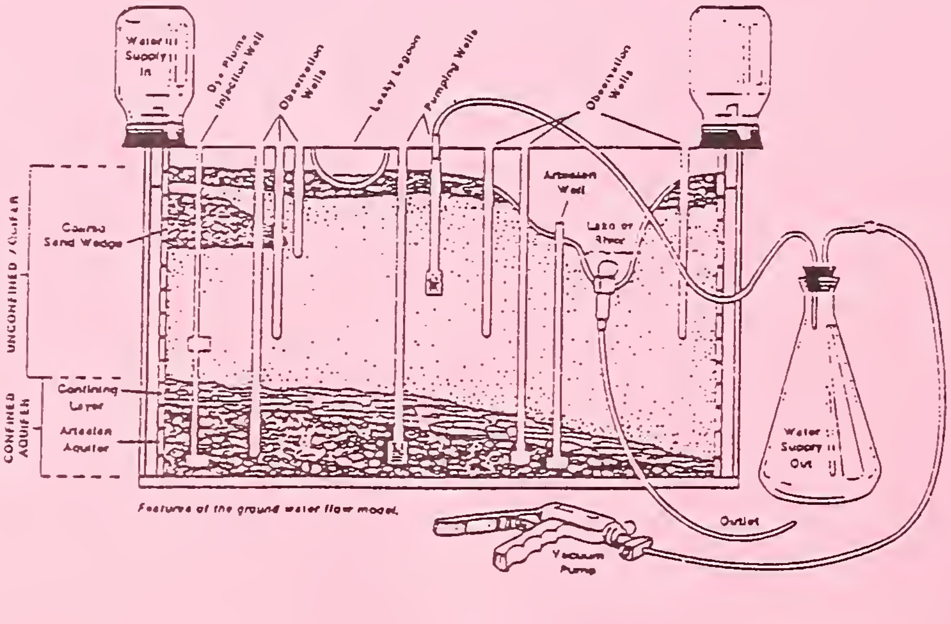
HOW TO RESERVE A MODEL

Reservations are accepted on a "first-come, fist-serve" basis. A confirmation will be sent two to five weeks before the actual shipping date. Models will be loaned out for a one-week period (not including shipping time).

Please contact Project WET Montana regarding shipping fees & details. Educators are encouraged to circulate the model between neighboring schools.

Send or call in your request to:

Project WET Montana
Gaines Hall Rm 122
Montana State University
Bozeman, Montana 59717
(406) 994-5392



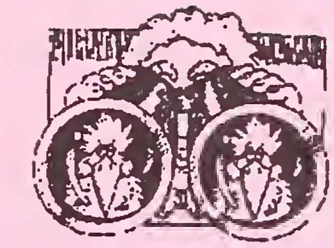
Features of the ground water flow model.

W E T

The ground water flow model is made available through the Montana Water Resources Center's Project 'Water Education for Teachers' (WET). The Project WET Montana program is an interdisciplinary, supplementary water education program for Montana educators.

Small Diameter Sewer Systems

Paul LaVigne & Tom Slovarp, Water Quality Bureau



Conventional gravity systems, consisting of eight-inch and larger diameter pipes, are by far the most widely used type of sewer. However, in the past fifteen to twenty years, there have been an increasing number of alternative, small diameter sewer systems installed across the nation. Several of these alternative sewer systems now exist in Montana. The three most popular types of small diameter systems are the Septic Tank Effluent Pump System (STEP), the Grinder Pump System (GP), and the Small Diameter Gravity System (SDGS).

The STEP system consists of individual septic tanks with pumping units (in some cases, two or more houses may share a single septic tank and/or pumping unit), pressure service lines and a force main. The septic tanks are typically 1000 to 1500 gallon units with the pumping units either inside the septic tank or in a separate pump vault. The pumps are usually small, submersible, ½ horsepower, 115 volt, centrifugal units able to pump 5 gpm against a head of about 150 to 200 feet. These units pump screened septic tank effluent through a small (1¼") service line and into the small diameter force main. The force mains vary in diameter from two to four inches, based on a minimum design velocity of one foot per second. Most service lines are equipped with two gate valves or ball valves and two check valves in order to provide assurance that no sewage backup occurs at the houses. The STEP systems are ideal for situations in which the treatment facility is at a higher elevation than the source of the wastewater.

The GP systems are small diameter pressure systems, like the STEP systems, but with grinder pumps instead of septic tanks. Each house is equipped with an individual GP unit consisting of a small (30 to 50 gallon) tank with a special pump. This grinder pump grinds the solids into fine particles that can easily pass through the small diameter lines. The pumps are typically 230 volt, progressive cavity, semi-positive displacement units of one or more horsepower, with capacities and heads similar to those of the septic tank effluent pumps mentioned above. Grinder pump service lines and force mains are usually designed with a minimum velocity of two feet per second. The higher velocities are required to help flush out any accumulations of solids that may exist within the lines. Service lines are typically designed with redundant shutoff valves and check valves, similar to the STEP systems.

The SDGS is simply a gravity system in which virtually all of the solids are removed at the septic tanks. Therefore, like the STEP system, only liquid enters the collection system. The SDGS is used where the sources of wastewater lie at an elevation greater that the treatment facility and where the force of gravity can be utilized to convey the septic tank effluent to this facility. Because there are no solids in the line, portions of these small (typically four-inch) diameter lines can be laid at a flat or even a negative gradient. This flexibility in alignment is ideal when the line must be routed over a small hill or across a long, flat section of land.

Currently, there are small diameter systems in Lincoln, Reserve, North Cutbank, and Missoula, with an additional STEP/GP system under construction along the east shore of Whitefish Lake.

The Lincoln sewer system, constructed in 1984, is a small diameter gravity system with some septic tank effluent pumps which serves a population of approximately 970. This is the oldest small diameter gravity sewer in operation in the state. A recent Water Quality Bureau inspection revealed the system is operating satisfactorily.

The Reserve sewer system, constructed in 1989, is a small diameter gravity system and serves a population of approximately 60.

The small diameter gravity sewer system in North Cutbank was constructed in 1990 and serves a population of approximately 65 persons.

The project under construction along the east shore of Whitefish Lake includes septic tank effluent pumps and a few grinder pumps and will serve a population of approximately 185.

The southwest area of the City of Missoula will be served by a STEP sewer system. Their first project, Cold Springs East, is one of three planned projects. It serves a population of 1200 persons. This project was constructed in 1991 at a cost of $2,258,000.

The other two Missoula projects, Wapikiya and Bellevue, will be constructed in 1992 & 1993. They will serve a population of approximately 3000. Recent bids for construction of these projects totaled $5,715,000.

Although there has been some reluctance on the part of some engineers and communities to use the small diameter sewer systems, as they become familiar with the systems and see successful construction & operation, we anticipate more of these systems will be constructed in Montana in the future.

* * *

WORKER LOSES HAND

Reprinted from WCB Health & Safety Fall '90

While servicing a water well, a worker had his hand severed when a pipe and pump fell further into the hole he was servicing.

The worker was attempting to remove a water pump from a well. He wrapped his hand around a release cable attached to a water well pitless adapter. A pitless adapter is a quick release mechanism that disconnects the downhole pipe and pump for servicing.

In this incident the problem was compounded by unclear written instructions accompanying the adapter and a faulty design release mechanism. The worker was unaware that the weight of the water pump plus pipe was 500 to 700 pounds. When the pipe and pump fell further down the hole, his hand, wrapped around the cable, was severed when it was pulled into the hole.

A number of workers have lost hands and suffered serious injuries while servicing pitless adapters. Workers should never wrap a cable around their hand when the pull of the cable is unknown. Wrapping a cable around the hand increases the possibility of limb loss dues to unexpected tension on the cable.

ELECTRONIC BULLETIN BOARDS FOR TRAINING AND INFORMATION

Dick Watson, Water Quality Bureau

Summary

This article discusses some of the electronic bulletin boards that are available to computer users in the state of Montana. We will cover the equipment requirements, software requirements, and setup procedures necessary to access these systems. There are several benefits to using this type of system. They can provide you with technical information, information on training, updates on current legislation, and allow you to ask other operators questions about specific problems that you may be having with your treatment system.

Introduction

Electronic bulletin boards are information storage and distribution systems that allow computer users to access text and data through the telephone *(as well as many other functions)* on a wide variety of topics. Examples of commercial bulletin boards would be CompuServe and Prodigy, these systems are available to the general public, however they also charge the users for access as well as the cost of the phone call. The systems that I will be discussing do not charge for the services provided, you only have to pay for the phone call.

To access a bulletin board there are several software options that must be set up in advance to allow your computer to communicate with the computer controlling the bulletin board. These settings are listed at the end of each system description. The general parameters and their explanations are as follows:

1. CHARACTER SET - The alphabet and symbols that are being used (*i.e.* USA)
2. PHYSICAL LINK - Determines whether or not the system allows random time intervals between signals *(asynchronous)* or if the signals must be at precise time intervals *(synchronous)*
3. BAUD - the speed at which data is transferred, measured in bytes per second.
4. PARITY - The means by which the system checks for errors in data transmission. Each piece of information is sent from one computer back to the other and the information sent is compared to the information received to insure accurate data transmission.
5. DUPLEX - This determines if the system can send and receive signals simultaneously, or if it must either send or receive only.
6. STOP BITS - This is a non data bit used to tell the computer where each segment of data ends. This enables the computer to recognize individual alpha and numeric characters, because each letter or number is composed of several bits of information.
7. TERMINAL TYPE - To access most bulletin boards your PC needs to act like *(emulate)* an input-output terminal on a mainframe computer. This allows the bulletin board to take over some of the functions that are normally controlled by your PC, such as screen display.

The following section describes some of the bulletin board services available, and the topics that they cover. The procedure for gaining access and software parameters are also given.

GENERAL EQUIPMENT REQUIREMENTS

The equipment that is necessary to access an electronic bulletin board includes:

1. A personal computer and monitor *(PC)*
2. A modem
3. A communications software package
4. A telephone line
5. A modem card if your computer does not have a serial port *(this can be determined by checking the instructions supplied with your computer under hardware)*

The type of PC that you use does not influence your ability to connect to a bulletin board, it only affects how fast the data can be read or stored on diskette for later use.

The modem that you choose should be either a Hayes modem or compatible as this is the industry standard. The baud rate *(or speed)* of the modem is rated in bytes per second, the higher the rate the faster you can transfer data. The most commonly used baud rates are 1200, 2400, and 9600. The higher the baud rate of the modem the more it will cost initially, but if used frequently, the faster modem will save money on phone bills.

The communications software that you use should be flexible enough to allow your PC to emulate *(act like)* different types of terminals. This is due to the fact that some bulletin boards interface with one particular terminal better than others. The best terminal for each bulletin board can be determined by trial and error. If your display looks strange and the other parameters are set correctly, try emulating a different terminal, this will usually clear up the problem *(you may have to repeat this process several times to find the type that works best).*

The telephone line that you use does not have to be a special type or a separate line for just the computer. If you have a phone with a modular plug, you can unplug the phone, plug the modem into the phone outlet, and then plug the phone into the modem. This will not effect the use of either the phone or the computer, but you will only be able to use one of them at a time.

If your computer did not come equipped with a serial port, you will need to purchase a circuit card to install in your PC that acts as an interface between the PC and the modem. This circuit card can be installed without having to take the system to a computer repair shop. Directions for installation should be included that will allow you to do this yourself.

NORTHERN MONTANA COLLEGE - HAVRE

The bulletin board at NMC covers a range of topics concerning agriculture, business, the Montana Environmental Training Center, and allows users to leave messages to each other. You can also use this bulletin board to request materials from the METC library or to sign up to attend workshops and seminars. To access the system you need to use the following procedure:

1. Set the software parameters *(the items on the list at the end of this section).*
2. Instruct the computer to dial the phone number *(this is usually a command from the software menu, the instructions that came with your program will explain how to do this in greater detail).*
3. Type in your first name, followed by an enter key *(CR)*
4. Type in your last name, *(CR)*
5. Type in your password, *(CR)*, this is chosen by you the first time you log in.*
6. You can now access the system to retrieve information, read any messages left for you or public messages, leave messages, or down load some of the public domain files or news articles.

NOTE

The first time that you call the bulletin board it will recognize that you are a new user and it will ask you several questions. After you have typed in your first name and last name, it will ask you what city you are calling from, type in your location *(city only)* and press *(CR)*. It will then ask you to enter a password with 1 to 8 characters, any combination of letters and numbers is allowed, but make this easy to remember because you need it to get back into the system the next time you call. The system then asks you to re-enter your password to verify it. **Remember that if you typed your password in using capitol letters when you log in again you will need to use capitol letters.**

After you have logged in to the system your screen will show a list of topics that you can choose from to read etc.. The choices listed on this screen are:

<1> Agriculture Sig. <2> Info-Mat Online Magazine
<3> METC <4> CETC <5> Electronics Sig. <9> MS DOS Sig.
<A> Non - IBM PC Sig. <C> CIS Sig. <D> TDBS Test Area
<M> Miscellaneous BBS Activities <F> File transfer area

To access one of these topics enter the letter or number enclosed by the < > and press the enter key. This will bring up a menu of choices for each of these topics. These menu topics are accessed by using the same procedure. These sub-menus also allow you to return to the previous menu by typing the letter P and pressing the enter key.

The materials available under these topics are:

<1> Agriculture articles that cover various topics. You may also leave messages in this area.
<2> This is a business oriented magazine that is free to use, but you have to register by typing in your name etc. before you can read the articles.
<3> To access the METC area you need to join the conference area. This is done by typing in your name etc. when prompted by the computer. You only have to do this the first time that you access the system. The topics available are: Water Quality Articles, METC Training Calendar, Workshops/classes/seminars schedule, Workshop etc. registration area, Correspondence courses available, Correspondence course registration area, Reference material available, Order reference material, and a message area.
<4> The CETC area requires registration and will be unavailable to most computer users unless they are employees of state or federal agencies.
<5> This area is currently empty.
<9> This area deals with the computer operating system MS DOS.
<A> This area is currently empty.
<C> This area requires a special authorization to access.
<D> This area is used to test your keyboard function. It does not provide much assistance, and you will probably not need to use it.
<F> The file transfer area is where you can read or copy messages, articles, or other information. To read an article you must 'download' it, and select the option 'T' to have it printed to your screen. To download a file at the 'command:' line type D 'filename.ext' and press enter. Remember to leave 1 blank space between the D and the filename.
<M> This is the area that you will be using if you want to leave a message for someone or to ask questions. Messages can be either private or public. This area also allows you to: online conference, electronic mail, message base access, a listing of bulletin board services, recent callers on line, your last 10 calls, phone number directory, user changeable options.

The information on this bulletin board is periodically updated. You should check the bulletin board about once a month, unless you have left a message or question, then you may want to check it more frequently. **If you do not log in at least once every 3 months, you will be dropped from the users list and you will have to start all over again.**

The software parameters that you need to access this bulletin board are:
Phone Number : 406 265-4184 *(usually entered as:4062654184)*
Character Set: USA
Physical link: Asynchronous Baud rate: 2400 Parity: OFF
Duplex: FULL Data Bits: 8 Stop bits: 1
Terminal Type:VT100 *(this one works best for me)*
The system operator is Jay Howland, and he can be reached at 406 265-4186 between 9:00 am and 3:00 pm Monday through Friday if you are having problems or have any questions about the bulletin board.

STATE OF MONTANA BULLETIN BOARD SYSTEM - HELENA

The bulletin board at Helena covers topics ranging from state agency program information to monthly legislative interim activities and calendar. This bulletin board should be very useful to the people who are trying to follow legislation and the impacts that it may have on their community. To access the system you need to use the following procedure:

1. Set the software parameters
2. Instruct the computer to dial the phone number
3. Type in your full name, followed by an enter key *(CR)*
4. Type in your password, *(CR)*, this is chosen by you the first time you log in.

Note

The first time that you log in, you will type in your full name and location then you will be asked the following questions, the suggested answers are in bold print: The questions are:

# Chars per line on screen *(10-132)*? **80**
<A> IBM/compatible <B> other
Enter the letter of your terminal, <CR> if not listed: **A**
Terminal profile set to:
No ANSI Codes allowed
No IBM Graphics allowed
Upper/Lower Case
Line Feeds Needed
0 Nulls after each <CR>
Do you wish to modify this? **N**
Do you wish to have a pause after each display page *(Y/N)*? **Y**
How many lines per Display Page? **24**

Then you will see a welcome screen, you need to select new user registration. This asks for your name, mailing address and telephone number, and allows the state to send you information on updates to the bulletin board and other items of interest.

You can now access the system to retrieve information, read any messages left for you or public messages, leave messages, or down load some of the public domain files or news articles. The specific topics that you can access are:

<A> Agency Information & Schedules <D> Disability System
<S> Selected Phone Numbers <E> Agriculture
<B> Bulletin Board Updates & Operating Info. <P> Public Forum
<C> Electronic Mail with Selected Agencies <F> File Transfer Area
<W> Montana Road and Weather Reports
</> HELP with operation of the Bulletin Board
<T> Time on System <U> Utilities <X> Exit the system

The materials available under these topics are:

A. An alphabetical list of state agencies and program descriptions with their calendars.
S. Toll free, Facsimile, TDD, and other state agency bulletin board phone numbers.
B. General operating instructions and phone numbers for help with operating the bulletin board.
C. Allows the user to send messages to various state agencies and the legislature.
D. Agencies and programs providing disability assistance.
E. USDA market news, agriculture statistics, Montana State University Agriculture news.
P. A message area where individuals may express their opinions on various topics, or issues, and reply to opinions expressed by other users.
W. State wide road conditions and weather forecasts, updated twice daily.
F. The area where you may download news articles, etc. from the bulletin board. Only state agencies may upload files to the bulletin board.
/. A general help area, with instructions on how to use the bulletin board.
T. Tells you how long you have been logged into the system. You are currently limited to 60 minutes per call, 180 minutes or 10 calls per day.
U. This area allows you to change the user defined parameters, such as your password.
X. Allows you to exit the system, at this point you have the choice to leave a message to the system operator if you want to.

Several **HELP** OPTIONS ARE available on menu screens to assist you in moving around the bulletin board and how to download and print information. This information can be found on the Top menu which is accessed by pressing **T**. To exit the system press **T** to return to the top menu and press **X** to exit, the system will ask you if you want to leave a message for the system operator, if not press **N** and you will exit the system.

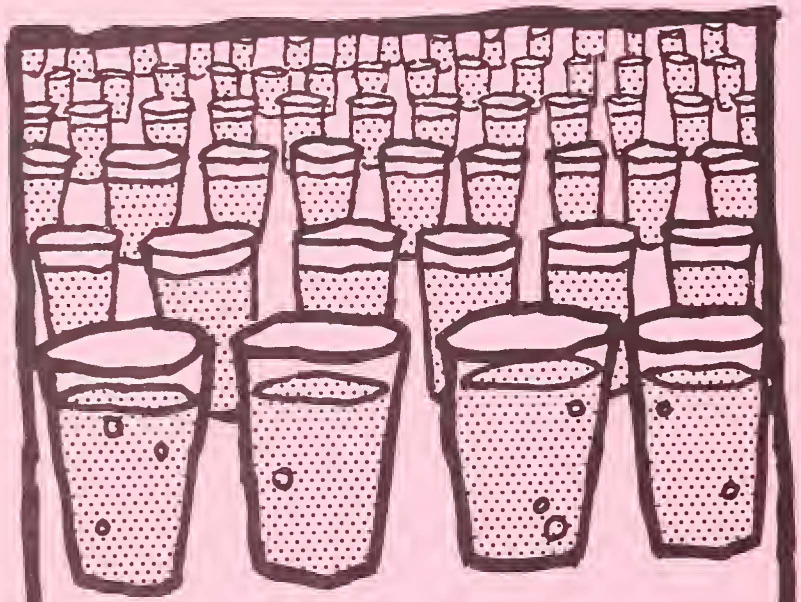
The software parameters that you need to access this bulletin board are:
Phone Number : 1-800-962-1729 *(usually entered as:18009621729)* Toll free in Montana (in Helena call 444-5648)
Character Set: USA
Physical link: Asynchronous Baud rate: 2400 Parity: OFF
Duplex: FULL Data Bits: 8 Stop bits: 1
Terminal Type:PT200 *(this one works well with this system)*
For more information about the system or for assistance call Department of Administration, Information Services Division at 406 444-2973

One other bulletin board that is available is the National Small Flows Clearinghouse, Wastewater Treatment and Information Exchange bulletin board service. The services offered by this bulletin board are: electronic mail, electronic conference, bulletins on wastewater related topics, electronic file transfer, and surveys. For further information about this system and how to access it please contact either Mr. Harry Kidder or Mr. Loukis M. Kissonergis at 1-800-624-8301.

GIVE DRINKING WATER A HAND

Celebrate National Drinking Water Week

May 3-9, 1992



If every household in America had a faucet that dripped once each second, we would waste 928 million gallons of water a day or enough to fill 7.5 billion 8 oz. glasses.

Eighty-five percent of the population is served by public water suppliers. The remaining 15 percent rely on 13 million private wells, cisterns, and springs for their drinking water. These sources are not regulated in all areas for safety and quality and it is up to the individual owners to test and treat their water supply.

Residents of the United States have the luxury to drink, bathe, and use water almost any time they wish. As a matter of fact, the United States uses more water per person than any other country.

The average daily requirement for freshwater in the United States is estimated to be 338 billion gallons a day. For Mother Nature to replace the water we use in a day, it would have to rain an average of one inch an hour for two solid weeks in Washington, DC.

Membership Application

Water Pollution Control Federation

601 Wythe Street
Alexandria, Virginia 22314-1994

Association

Montana Water Pollution Control Association

Use this application to join the Water Pollution Control Federation and your local Member Association. Simply complete this application and return it to the address below. Along with your monthly publications, you are also entitled to group insurance, technical assistance, discount on technical publications, and much more!

Please print.

First Name, Middle Initial (11)
Last Name (16)
(Jr., Sr., etc.) (3)

Mailing address ☐ Business or ☐ Home

Business Name (if applicable) (30)
Street or P.O. Box (30)
City (20)
State (2)
Zip Code - (9)
Area Code—Telephone - - (10)
Country (If Outside U.S.) (16)

WPCF Sponsor (Not Required) (28)
Sponsor's Member I.D. Number (6)

Employer Code (2)

- 11 – Local/Regional Government/Agency
- 13 – State/Interstate Government/Agency
- 16 – Federal Government/Agency
- 21 – Consulting Firm (Engineering/Other)
- 25 – Wastewater Equipment/Material/Supplier
- 27 – Industry
- 28 – Construction Contractor
- 31 – Educational Institution
- 61 – Other (Please specify): ____________

Education Code (1)

- 1 – Less than High School
- 2 – Training Courses, Short School
- 3 – High School
- 4 – Attended College
- 5 – Completed Junior College
- 6 – Bachelor's Degree
- 7 – Advanced Degree

Membership Categories

	☐ **Active**	☐ **Operations Division**	☐ **Student**	☐ **Corporate**
	For individuals involved or interested in the advancement of knowledge pertaining to water quality.	For individuals working on a day-to-day basis (or retired from) in a wastewater collection, treatment, or laboratory facility.	For individuals enrolled at least half-time in a college or university.	For companies engaged in the design, construction, operation or management of water quality systems.
Dues	$ 70.00	$ 40.00	$ 19.50	$ 180.00
Journal	Included	☐ $30.00	Included	Included
Highlights	Included	☐ $15.00	Included	Included
Forum	☐ $12.50	Included	☐ $12.50	Included
TOTAL	$______	$______	$______	$______

Method of Payment

☐ Check Enclosed—Make check payable to WPCF.
☐ Charge my ☐ VISA ☐ MasterCard ☐ ■

Account Number ____________ Exp. Date ______

Signature ____________ ( ) Daytime Phone No. ______

Send Completed Application and Payment to:

WPCF, Member Records
601 Wythe Street
Alexandria, Virginia 22314-1994

For more information, call (703) 684-2452

Postal Requirement: Dues allocated for publications when included in membership: *JWPCF* — $15; *Highlights* — $3; *Operations Forum* — $5.

AMERICAN WATER WORKS ASSOCIATION
INDIVIDUAL MEMBERSHIP APPLICATION

Complete this form and mail to:
AWWA / 6666 W. Quincy Avenue / Denver, CO 80235
(303) 794-7711 • FAX (303) 794-7310

PLEASE PRINT OR TYPE

AWWA USE ONLY

Last Name ____________________ First Name (and middle initial) ____________________

Mailing Address ____

____

City ____________________ State/Province ______ ZIP/Postal Code __________

Area Code ______ - Telephone ______ - ______ Area Code ______ - FAX ______ - ______

Title ____

Employer's Name (If not already in mailing address) ____

Applicant's Signature ____________________ Date __________

Signature of AWWA Member Endorsing Application (Optional) ____________________ Endorsing Member Number __________

ANNUAL DUES:

$65/Active
Grade Code 02

$30/Affiliate
Grade Code 06
(For operator level personnel or employees of small utilities)

$22/Student
Grade Code 14
(Must be enrolled and carrying at least 10 credit hours)

ANNUAL DUES $ __________

New England Assessment* __________

Multi-Section Option (other than own) __________

TOTAL DUE $ __________

If you have been a member of AWWA before, indicate dates here:

____

Make check payable to AWWA (Canadian funds add 20%).

☐ MasterCard ☐ VISA ☐ Diner's Club
☐ American Express ☐ Send Invoice

Card Number ____________________

Expiration Date __________

PREPAYMENT OF ONE YEAR'S DUES REQUIRED
No action can be taken on this application until payment is received.

*Applicants with an address in the New England Water Works Association a Section of AWWA (ME, NH, RI, VT, MA) must add $32.00 for Active Membership, or $15.00 for Affiliate Membership in their annual dues.

Address shown above is:
Check One: ☐ Home ☐ Office

MULTI-SECTION MEMBERSHIP

At this time you may also select a year's membership in other AWWA sections by circling your choices and include $12 for each section circled. Enter this total on the line reading "multi-section."

CIRCLE SECTION CHOICES

AKA	ALASKA	IWA	IOWA	PAC	PACIFIC NORTHWEST
ALA	ALABAMA-MISSISSIPPI	KAN	KANSAS		(OR, WA, PART OF ID)
ARI	ARIZONA	KNT	KENTUCKY-TENNESSEE	PEN	PENNSYLVANIA
ATC	ATLANTIC-CANADA	MEX	MEXICO	PRT	PUERTO RICO
	(NB, NF, NS, PEI)	MIC	MICHIGAN	QUE	QUEBEC
BRC	BRITISH COLUMBIA	MOU	MISSOURI	RMT	ROCKY MOUNTAIN
	(BC, YT)	MTN	MONTANA		(CO, NM, WY)
CAL	CALIFORNIA-NEVADA	NEB	NEBRASKA	SCR	SOUTH CAROLINA
CHS	CHESAPEAKE	*NEW	NEW ENGLAND	SDK	SOUTH DAKOTA
	(DE, DC, MD)		(ME, NH, RI, VT, MA)	SOW	SOUTHWEST
CON	CONNECTICUT	NEJ	NEW JERSEY		(AR, LA, OK)
FLA	FLORIDA	NEY	NEW YORK	TEX	TEXAS
GEO	GEORGIA	NOC	NORTH CAROLINA	VIR	VIRGINIA
HWI	HAWAII (GUAM)	NOL	NORTH CENTRAL	WEC	WESTERN CANADA
ILL	ILLINOIS		(MN, ND)		(AB, MB, NT, SK)
IND	INDIANA	OHO	OHIO	WEV	WEST VIRGINIA
INT	INTERMOUNTAIN	ONT	ONTARIO	WIS	WISCONSIN
	(UT, PART OF ID)				

*IF "NEW" ENGLAND IS A CHOICE, add $44.00.
This includes their assessment and multi-section fee.

ALL APPLICANTS SHOULD COMPLETE THIS SECTION:

Circle the descriptions below that best describe you. The information is used in audits of AWWA readership. Circle only ONE in each group.

BUSINESS AND INDUSTRY

A. Public Water Supply Utility–Municipally Owned
B. Public Water Supply Utility–Investor Owned
C. Governmental—Federal, State, Local
D. Consultant
E. Contractor
F. Private Industrial Systems or Water Wholesaler
G. Manufacturer of Equipment & Supplies including Representatives
H. Distributors of Equipment & Supplies including Representatives
I. Educational Institutions, Faculty and Students, Libraries, and Other Related Organizations
J. Fully Retired
K. Research Lab
L. Unreported

JOB TITLE

A. Executive-Gen'l Mgr., Commissioner, Board Member, City Mgr., Mayor, President, Vice-President, Owner, Partner, Director, etc.
B. Management-Division Head, Section Head, Mgr., Chief Engineer, Comptroller, etc.
C. Engineering non-managerial-Civil Engr., Mech. Engr., Envir. Engr., Planning Mgr., Field Engr., System Designer, etc.
D. Scientific non-managerial-Chemist, Biologist, Biophysicist, Researcher, Analyst, etc.
E. Purchasing-Purchasing Agent, Procurement Specialist, Buyer, etc.
F. Operations-Foreman, Operator, Maintenance, Crewman, Service Rep., etc.
G. Marketing & Sales non-managerial-Mkt. Analyst, Mkt. Rep., Salesman, Sales Rep., etc.
H. Other (describe)

CHECK FIELD(S) SERVED:

5 ☐ Water Supply Only
7 ☐ Wastewater Only
9 ☐ Both
3 ☐ Other

In some AWWA sections, a portion of the section allotment equal to 50 percent or more of the domestic subscription rate charged for the section periodical will be allocated toward a subscription of that periodical.

Dues allocated for each publication members receive:
Journal $28
MainStream $6
Opflow $5
Waterworld News $5

Water Quality Bureau
Department of Health and
Environmental Sciences
Room A-206, Cogswell Building
Helena, Montana 59620

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